

Illustrated catalogue of type specimens of Volutidae (Gastropoda) in the Malacological Collection of the Museo de La Plata, Argentina

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Abstract

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The Malacology Collection of the Museo de La Plata contains more 13,000 lots from various regions of Argentina and other South American countries. The Collection also includes 511 type lots. Among the oldest type specimens are a large series of marine gastropod from Patagonia which were studied by Fernando Lahille in 1895. He was one of the first's naturalists of the Museo de La Plata, and there between 1893 and 1899, he made several studies in zoology. During that time, he described three species and forty varieties of Volutidae. Herein, we compare Lahille's type specimens, label data, number, and specimen information to the original descriptions and illustrations of these taxa. Each taxon has been photographed in multiple views. This historic type material is entirely composed of shells. This work is the first of a series of photographic catalogues of type material from the Malacology Collection of the Invertebrate Division of Museo de La Plata.

Introduction

The Malacology Collection of the Museo de La Plata contains specimens from five mollusc groups, including from terrestrial, marine, and freshwater ecosystems. Of the over 13,000 lots that form the collection, almost 70% of these have been identified to species level. The collection includes 511 type lots. The specimens come from various regions of Argentina, and from other countries such as Brazil, Chile, Paraguay, Peru, Uruguay; a few are from other parts of the world. The lots are preserved in the traditional way, i.e. dry, wet, SEM stubs, and microscope slides, as well as frozen tissue for molecular studies.

The collection is continuously growing through projects from the museum's researchers, as well as by donations and legacies from outside researchers and collectors. It has also been expanded by various expeditions over the years, such as Hassler in 1870–1871, Hauthal in 1898, Bentart in 1898, Beaufils in 1898, Lahille in 1898, Moreno in 1899, Facul-

tad de Ciencias Exactas y Naturales, Universidad de Buenos Aires in 1920, Merkle in 1921, Harvard/Bahamas in 1935, Museo de La Plata in 1928, 1948, 1958, 1962, 1970, and 1980, Monte Hermoso in 1948, Butantán in 1949, Walter Herwig in 1966 and 1971, San Antonio Oeste (SAO), Río Negro Province in 1971, and Shinkai Maru XI in 1979.

The mollusc collection of the Museo de La Plata is also the result of the contributions of researchers that are historically important figures in the natural sciences in South America. Among them are F. Lahille, F.P. Moreno, and C.L. Spegazzini at the end of the 19th century, M. Doello Jurado and J. Durione at the start of the 20th century, and W.K. Weyrauch, J.J. Parodiz, M.I. Hylton Scott, J. Frengüelli, Z.A. de Castellanos, J.P.M. Birabén, and A.A. Bonetto in the mid-20th century. In the collection, 65% of the material is gastropods and 2.85% (248 lots) are volutids, which include 39 type lots.

Fernando Lahille, who was born in and studied in France, arrived in Argentina in 1893. He had been invit-

ed by Francisco Pascasio Moreno, who was, at that time, the director of the Museo de La Plata. F. Lahille carried out his scientific activities and directed and organised the Zoology Section until 1899. During that period, he described three volutid species and 40 varieties, depositing the type specimens in this institution.

Volutids are marine snails with large, thick, shiny coiled shells. They inhabit diverse habitats in tropical to cold waters, from intertidal to subtidal depths to at least 500 m, and on sand, mud or sand-mud substrates. The family is globally distributed and comprises about 200 species, of which nearly 30 occur in the Southwestern Atlantic from Venezuela to Argentina. Sixteen species of this family inhabit Argentine waters (Scarabino 1977; Castellanos and Landoni 1992; Lasta et al. 2000).

Most volutids present ornate shells, with an elongated aperture and columellar folds. Most species have no operculum. The smallest species is about 9 mm long, but some reach over 500 mm. They possess a highly developed foot that allows them to bury themselves in the substrate and come out to feed and copulate (Pope and Goto 1992). They are mostly predators or scavengers and feed on molluscs and other invertebrates (Morton 1986). Their fertilised eggs are deposited in masses that are generally fixed to hard substrates; crawling juveniles emerge directly from the eggs, and there is no free-swimming larval stage. *Pachycymbiola brasiliensis* (Lamarck, 1811) is a particular case where ovicapsules are not fixed to a substrate and are freely transported by the currents (Penchaszadeh and de Mahieu 1976). Volutids often have small geographic ranges and isolated populations that develop their own characters of shell shape and colour pattern. These populations are frequently very close geographically but are separated by some sort of barrier, such as a deepwater channel. These variations have led to the description of varieties of most species.

Besides preserving the type material, one of the responsibilities of the Museo de La Plata is to grant accessibility to its collections. Part of this role is achieved through catalogues, and the Invertebrate Division of the Museo de La Plata currently has published nine catalogues (Arrozpide 1986; Pereira et al. 1999, 2004; Sutton and Damborenea 2000; Martín and César 2004; César and Damborenea 2010, 2016; Lunaschi et al. 2012; Díaz et al. 2017).

The present work, starting with the Volutidae, is the beginning of a series of photographic catalogues of type material from the Malacology Collection of the Invertebrate Division of the Museo de La Plata. The type materials of this family is entirely composed of the shells of the species and varieties described by Lahille in 1895.

Material and methods

During this project, the type materials of the Lahille Collection were separated, label data, number of specimens, and specimen information were compared to the original description (Lahille 1895). Specimens photographed in Lahille (1895) have the corresponding plate and figure

numbers on them. We included collection catalogue numbers of the Malacological Collection of the Museo de La Plata (MLP-Ma), type status, and specimen number. We also compared all the specimens with the original figures, and we present some remarks.

For each taxon, we selected and photographed a morphologically representative specimen in apertural, lateral, dorsal, apical, and umbilical view. The rest of the specimens, which were earlier figured by Lahille, were only photographed in apertural view. Photographs were taken with a Nikon d80 camera, a Nikon DX af-s nikkor 18–135mm 1:3.5–5.6G ED lens, and using a Tiffen colour control chart.

The resulting catalogue is presented in alphabetical order according to species name in its original combination, followed by authority and year of publication, current name, and a summary of the description provided by Lahille. For each species, the varieties are detailed starting with *typica* and followed by the rest in alphabetical order. Name, combination, authority, and varieties are kept as mentioned by Lahille (1895).

Results

Voluta ambigua Lahille, 1895

Current name: *Odontocymbiola magellanica* (Gmelin, 1791); after Rosenberg (2009).

Lahille (1895) described this species and remarked that its adult stage is very similar to *V. magellanica* Chemnitz, 1788, but differs from that species by the presence of numerous eroded tubercles. Juveniles, which have smooth shells, differ from *V. magellanica* in having the last whorl strongly vaulted and less elongated. Lahille also noted that this species is also similar to *V. ancilla* Solander, 1786 [currently *Adelomelon ancilla* (Lightfoot, 1786)].

This material was revised in 2004 (Wiggers and Vitenheimer-Mendes 2008).

Voluta ambigua typica Lahille, 1895

Syntypes: MLP-Ma 10858, 4 specimens figured by Lahille (1895) (Table 1; Figs 1, 2).

This variety has, according to Lahille (1895), a shell that is 150 mm long by 75 mm wide, with the first whorls not carinate and the tubercles only on the last whorl of the spire. There are generally four columellar folds.

Voluta ambigua constricta Lahille, 1895

Syntypes: MLP-Ma 10856, 2 specimens figured by Lahille (1895: pl. VIII, figs 163, 164); label reads “*constricta*” (Fig. 3).

The shells are less elongated and last whorl less expanded than the variety *subnodosa*, so the grey to purple apertures are regularly arched and much narrower. The superficial ornamentation of the first whorls is more accentuated, as are the carina and tubercles, which reach the last whorl.

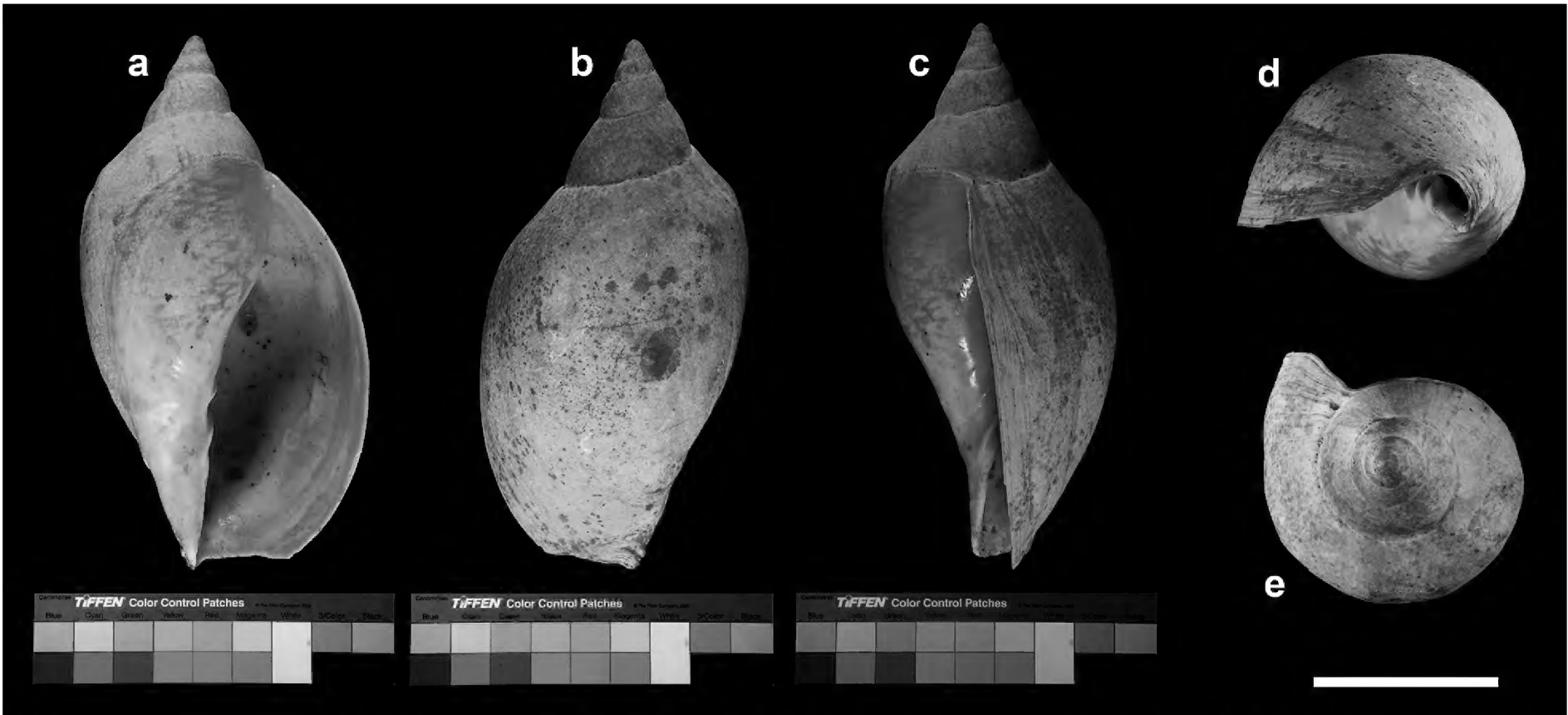


Figure 1. *Voluta ambigua typica*, specimen figured by Lahille (1895: pl. XII, fig. 16). **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

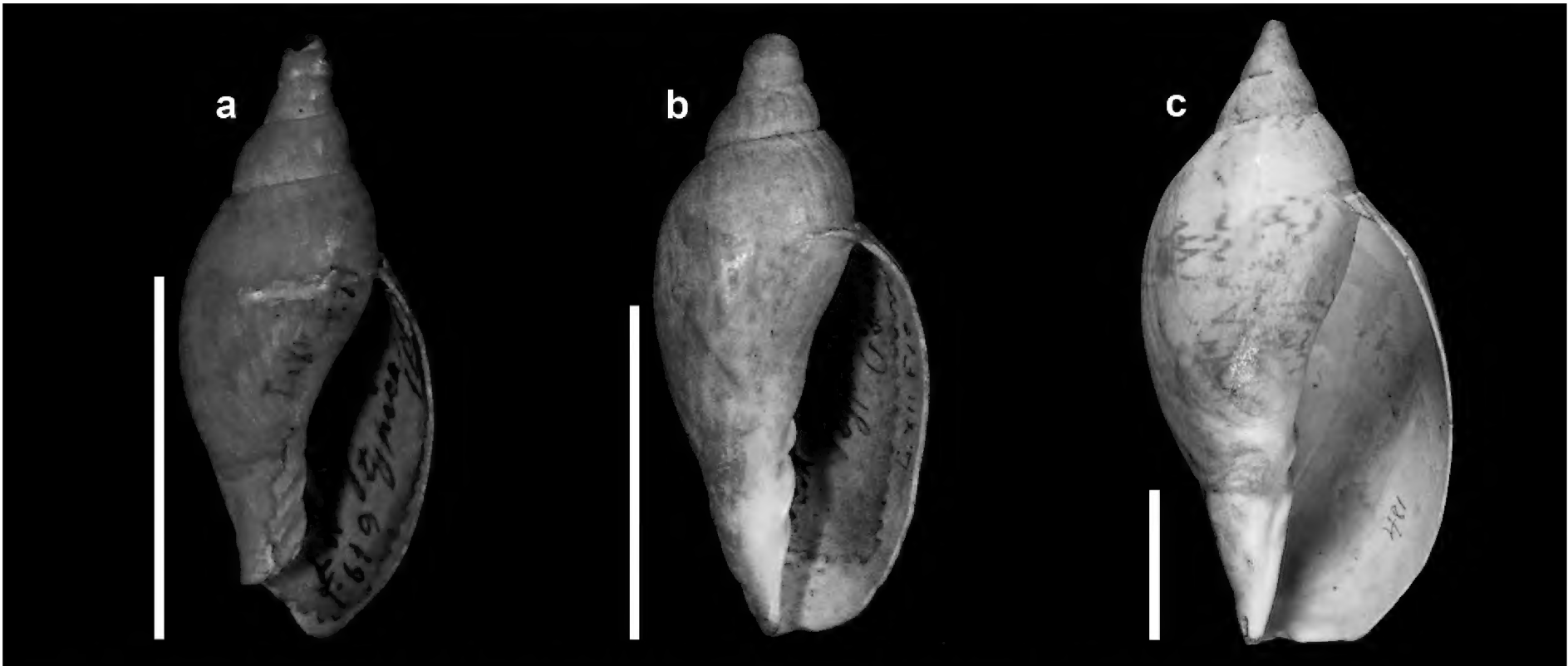


Figure 2. *Voluta ambigua typica*, specimens figured by Lahille (1895). See references on Table 1. Scale bars: 3 cm.

Table 1. *Voluta ambigua typica*, specimens figured by Lahille (1895) with the detail of the inscriptions on their shells and figures here.

Figure in Lahille (1895)	Detail	Figure
Pl. XII, fig. 16	478	1
Pl. II, fig. 61; pl. XII, fig. 11	“1. <i>Magellanica typica</i> 1°S”	2a
Pl. XII, fig. 12	“2. <i>Magellanica typica</i> 1°S”	2b
Pl. XII, fig. 15	481	2c

Voluta ambigua pseudotuberculata Lahille, 1895

Holotype: MLP-Ma 10855, ca 106 mm long × 62 mm wide, figured by Lahille (1895: pl. XI, fig. 6). Label reads: “1. *Pseudo-tuberculata*” (Fig. 4).

The shell has accentuated coloured lines. It has a carina and tubercles on every whorl, slightly attenuated on the last whorl of the spire. The suture of the last whorl of the spire is almost at the same level as the row of tubercles of the penultimate one. The aperture is regularly arched and with three columellar folds.

Voluta ambigua subnodosa Lahille, 1895

Holotype: MLP-Ma 10857, ca 120 mm long × 65 mm wide, figured by Lahille (1895: pl. XI, fig. 9). Label reads: “1. *subnodosa*” (Fig. 5).

Lahille (1895) mentioned that *V. subnodosa* Leach, 1814, is similar to this variety of *V. ambigua*. The shell has the last whorl expanded and smooth, and there are almost always

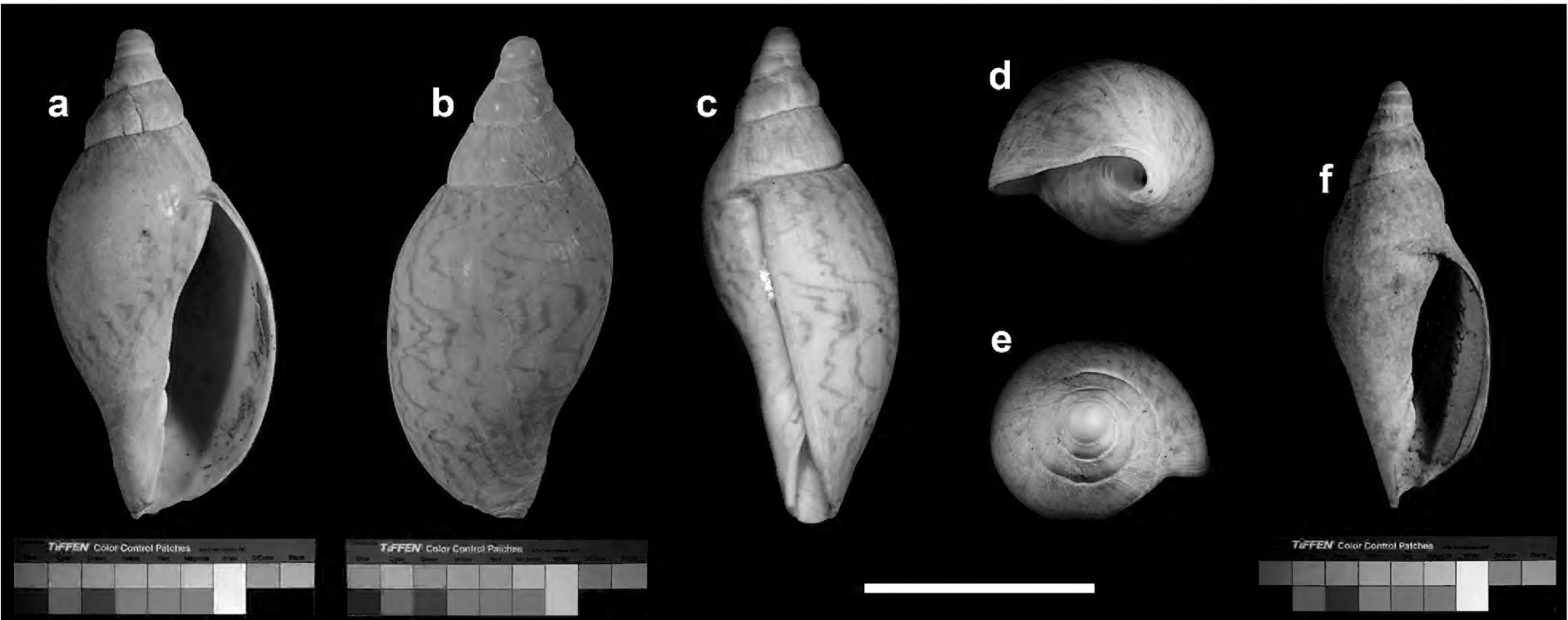


Figure 3. *Voluta ambigua constricta*. **a–e** Specimen figured by Lahille (1895: pl. VIII, fig. 164) **a** Apertural view **b** Dorsal view **c** Lat-
eral view **d** Umbilical view **e** Apical view **f** Specimen figured by Lahille (1895, pl. VIII, fig. 163) in apertural view. Scale bar: 3 cm.

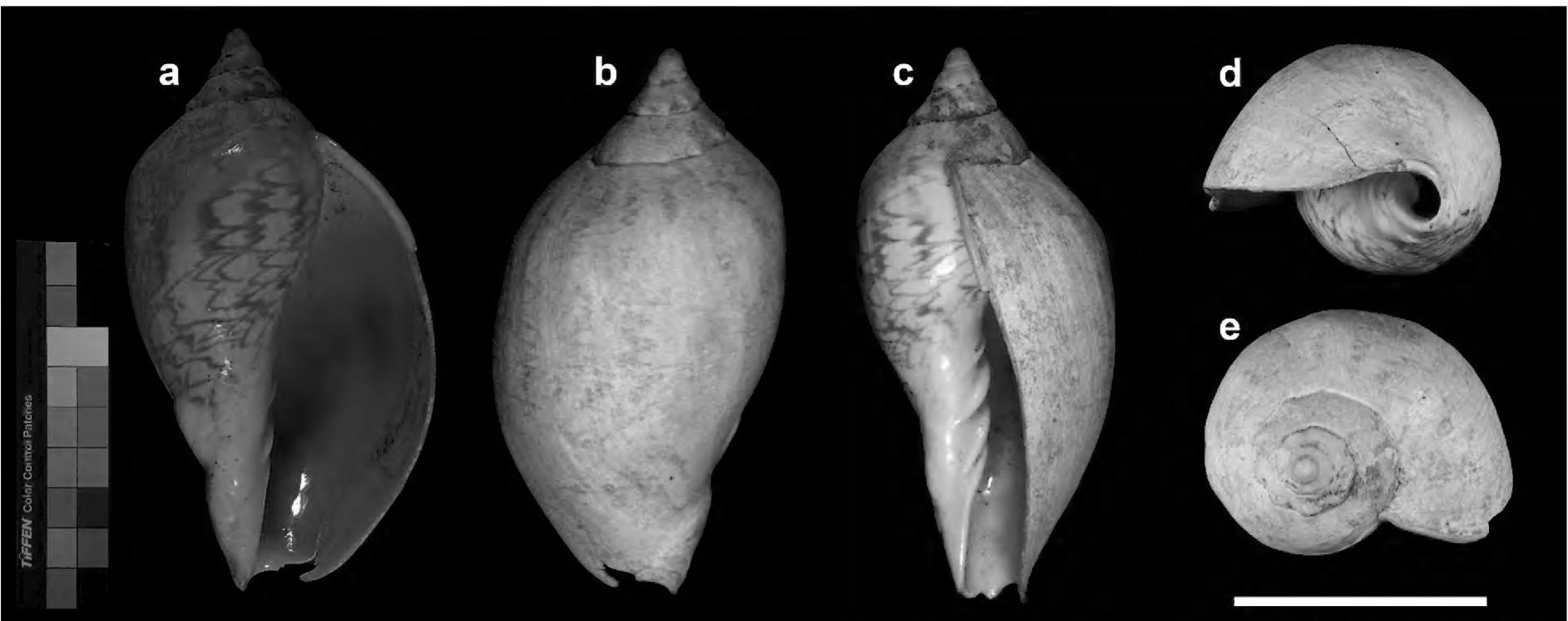


Figure 4. *Voluta ambigua pseudotuberculata*, holotype figured by Lahille (1895: pl. XI, fig. 6) **a** Apertural view **b** Dorsal view **c** Lat-
eral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

three very dark, narrow, angular transverse lines. The spire is short and consists of six whorls, of which the third and fourth whorl are subcarinate at the middle with small tubercles. The aperture is wide, pale orange-brown, and there are three columellar folds. The inferior fold is smaller than the others.

***Voluta ancilla* Solander, 1786**

Current name: *Adelomelon ancilla* (Lightfoot, 1786).

Lahille (1895) postulated that this species might be very common on the Patagonian shore, and described six varieties.

***Voluta ancilla typica* Lahille, 1895**

Syntypes: MLP-Ma 10862, 7 specimens figured by Lahille (1895) (Table 2), 12 other specimens not figured by Lahille. Some specimens more than 150 mm long. Lahille (1895) separated these specimens in two series (Figs 6, 7).

Table 2. *Voluta ancilla typica*, specimens figured by Lahille (1895) with the details of the inscriptions on their shells and figures here.

Figure in Lahille (1895)	Detail	Figure
Pl. VIII, fig. 191	"15. <i>typica</i> (2°serie). 192"	6
Pl. I, fig. 9; pl. VIII, fig. 159	"12. <i>typica</i> (1°S)"	7a
Pl. II, fig. 63a; pl. VIII, fig. 189	"7. <i>typica</i> (2°s). 350"	7b
Pl. XI, fig. 8	"6. <i>typica</i> (1°s)"	7c
Pl. II, fig. 63; pl. VIII, fig. 187	"5. <i>typica</i> (2°s)"	7d
Pl. VIII, fig. 186	"1. <i>typica</i> "	7e
Pl. VIII, fig. 184; pl. XII, fig. 35		7f

Lahille (1895) described this variety as having a pale, fusiform shell, with a smooth surface and only fine growth lines. The shell is yellowish with dark longitudinal lines, some of which are almost straight and others are deeply sinuous. The long spire is formed by seven whorls that are separated by deep sutures. In

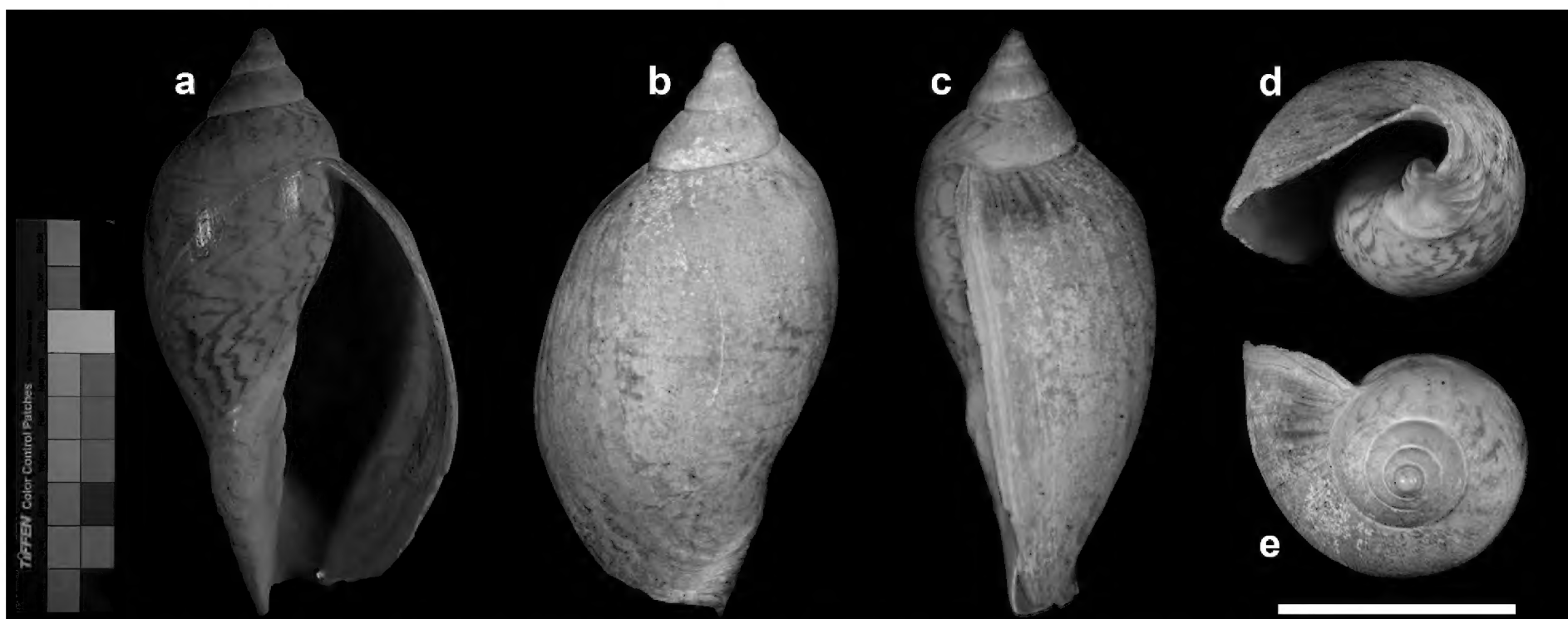


Figure 5. *Voluta ambigua subnodosa*, holotype figured by Lahille (1895: pl. XI, fig. 9) **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

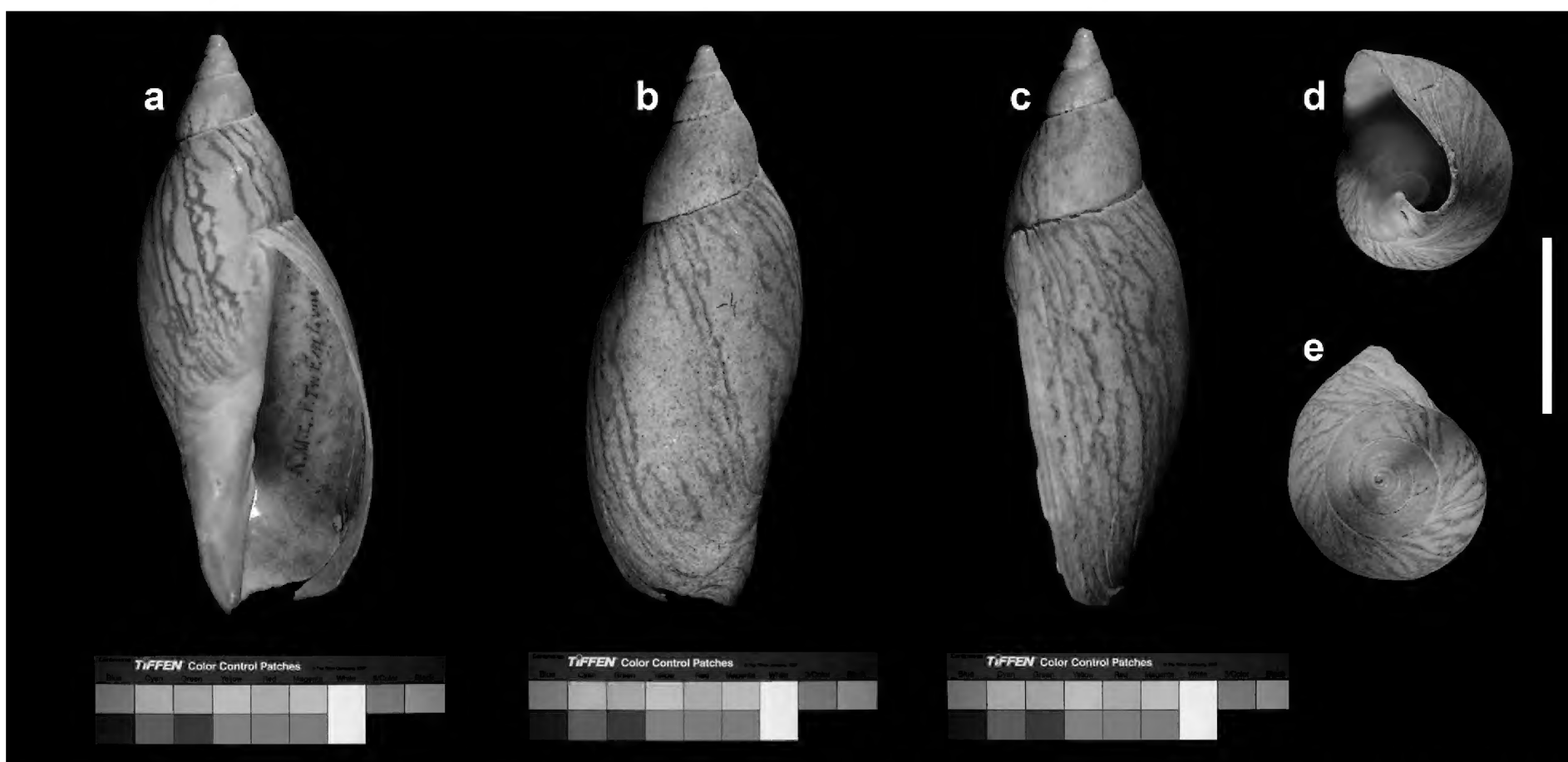


Figure 6. *Voluta ancilla typica*, specimen figured by Lahille (1895: pl. VIII, fig. 192) **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

most specimens, the length of the last whorl is two-thirds of the total length. The free and columellar edges are thin. The colour of the aperture varies from yellowish-white to orange. Generally, there are four columellar folds and the inferior one is strong. They live almost completely buried, so the upper part of the shell is frequently eroded.

Voluta ancilla abbreviata Lahille, 1895

Syntypes: MLP-Ma 10863, 2 specimens figured by Lahille (1895: pl. II, fig. 66; pl. VIII, fig. 158; pl. XI, fig. 3) (Fig. 8). The label of one specimens reads: “*ponderosa*”.

According to Lahille (1895), this variety has a “horn-shaped” spire.

Voluta ancilla elongata Lahille, 1895

Holotype: MLP-Ma 10860, 195 mm long, figured by Lahille (1895: pl. XI, fig. 2). Label reads: “2.*elongata* 455” (Fig. 9).

This variety has shells with a high spire. In a shell of 100 mm long aperture, the spire is 80 mm long from its tip to the upper angle of the aperture.

Voluta ancilla expansa Lahille, 1895

Syntypes: MLP-Ma 10859, 1 specimen figured by Lahille (1895: pl. XI, fig. 1), label reads: “4.*expansa*”; 3 other specimens not figured by Lahille (Fig. 10).

The diameter of the last whorl is higher than the double the diameter of the penultimate whorl.

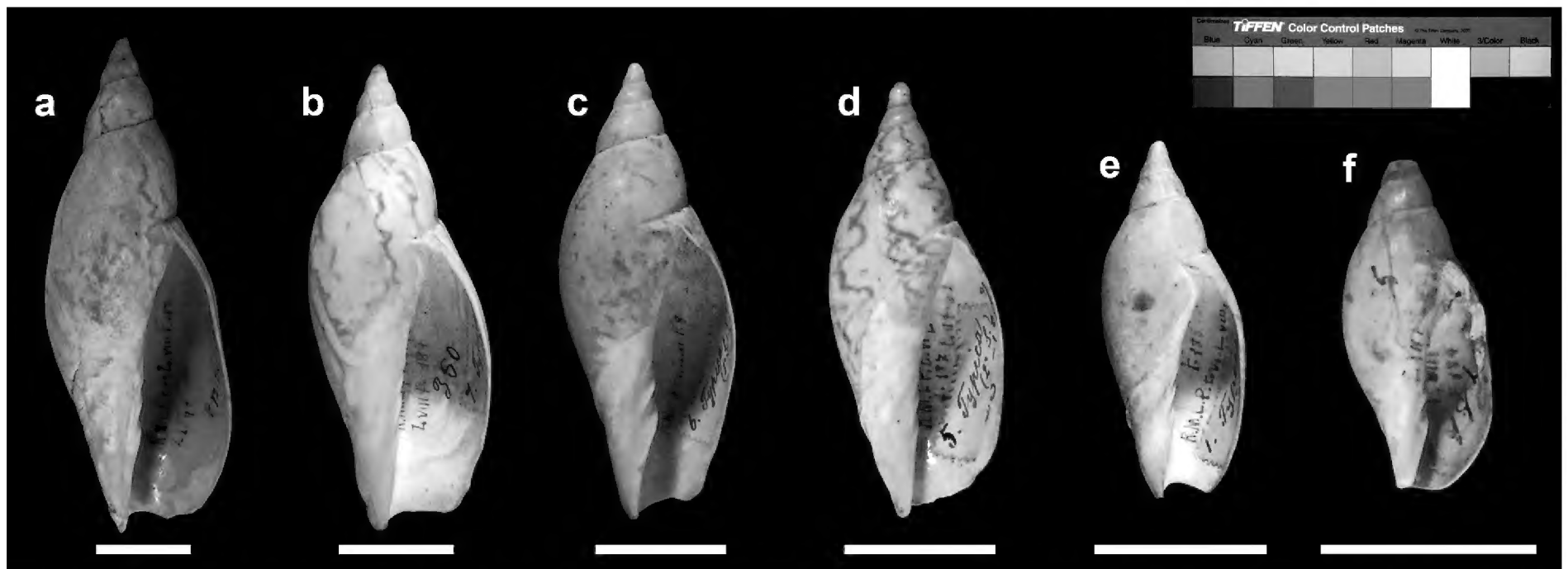


Figure 7. *Voluta ancilla typica*, specimens figured by Lahille (1895: pls I, II, VIII, XI, XII. See references on Table 2. Scale bars: 3 cm.

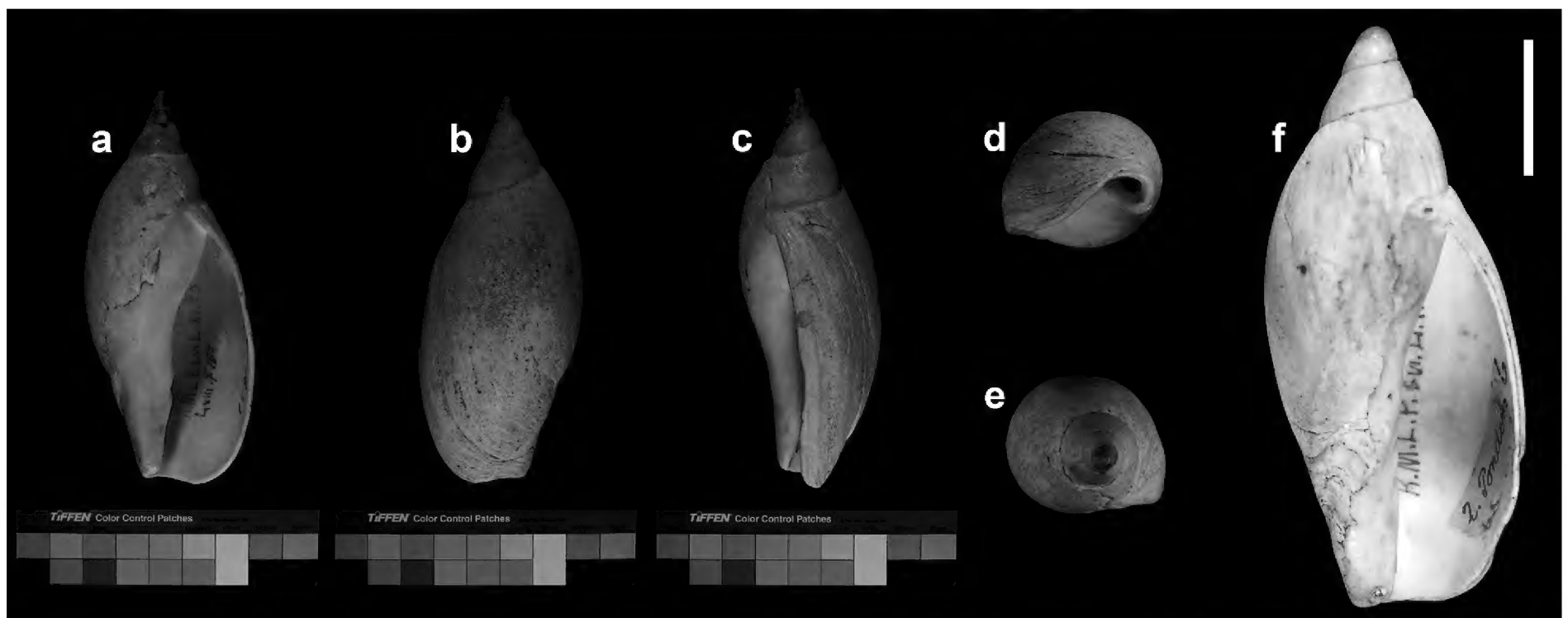


Figure 8. *Voluta ancilla abbreviata*, figured by Lahille (1895). **a–e** Correspond to pl. XI, fig. 3 and pl. VIII, fig. 158 **f** Corresponds to pl. II, fig. 66 **a, f** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

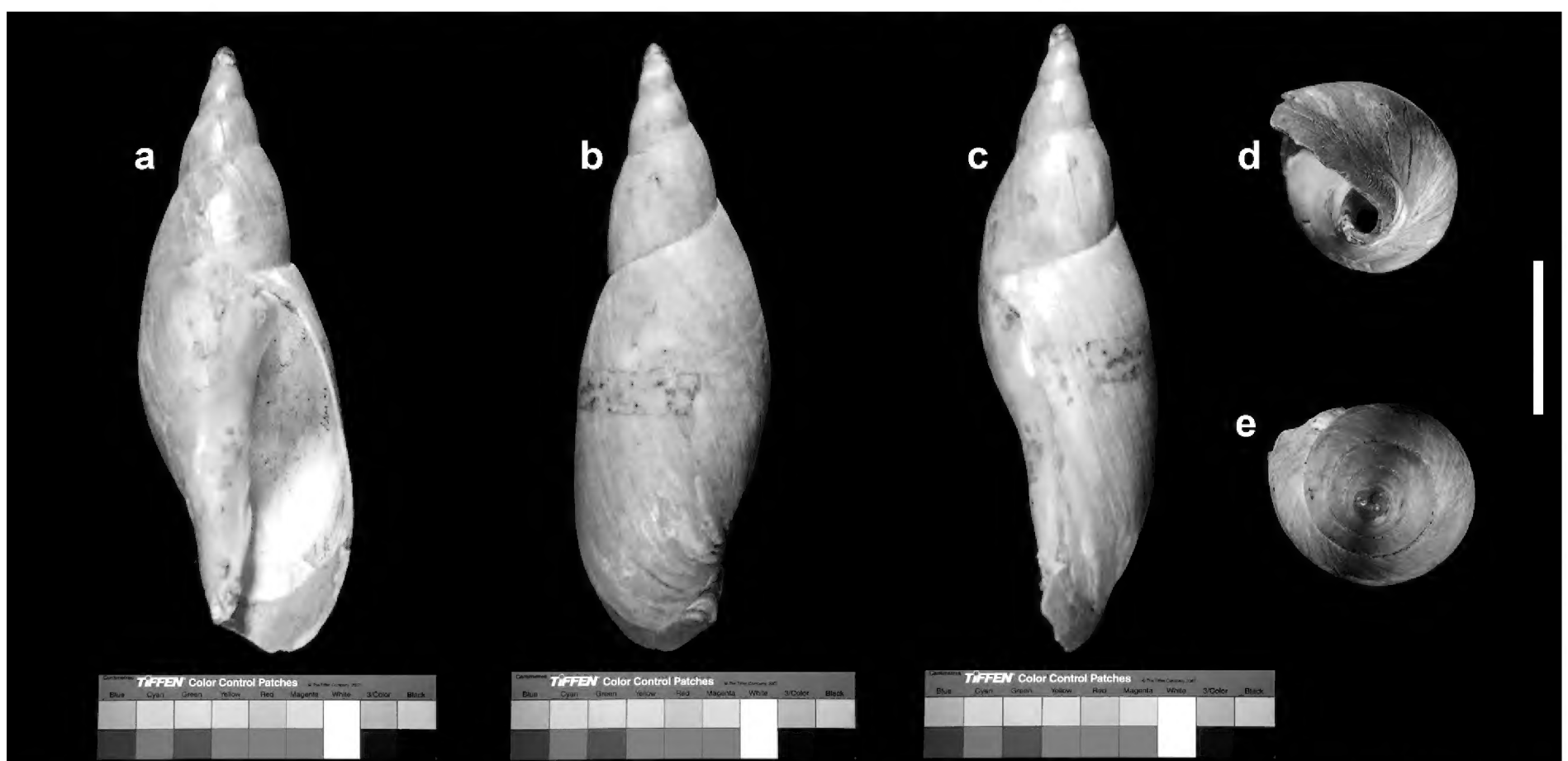


Figure 9. *Voluta ancilla elongata*, holotype figured by Lahille. **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.



Figure 10. *Voluta ancilla expansa*, specimen figured by Lahille. **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

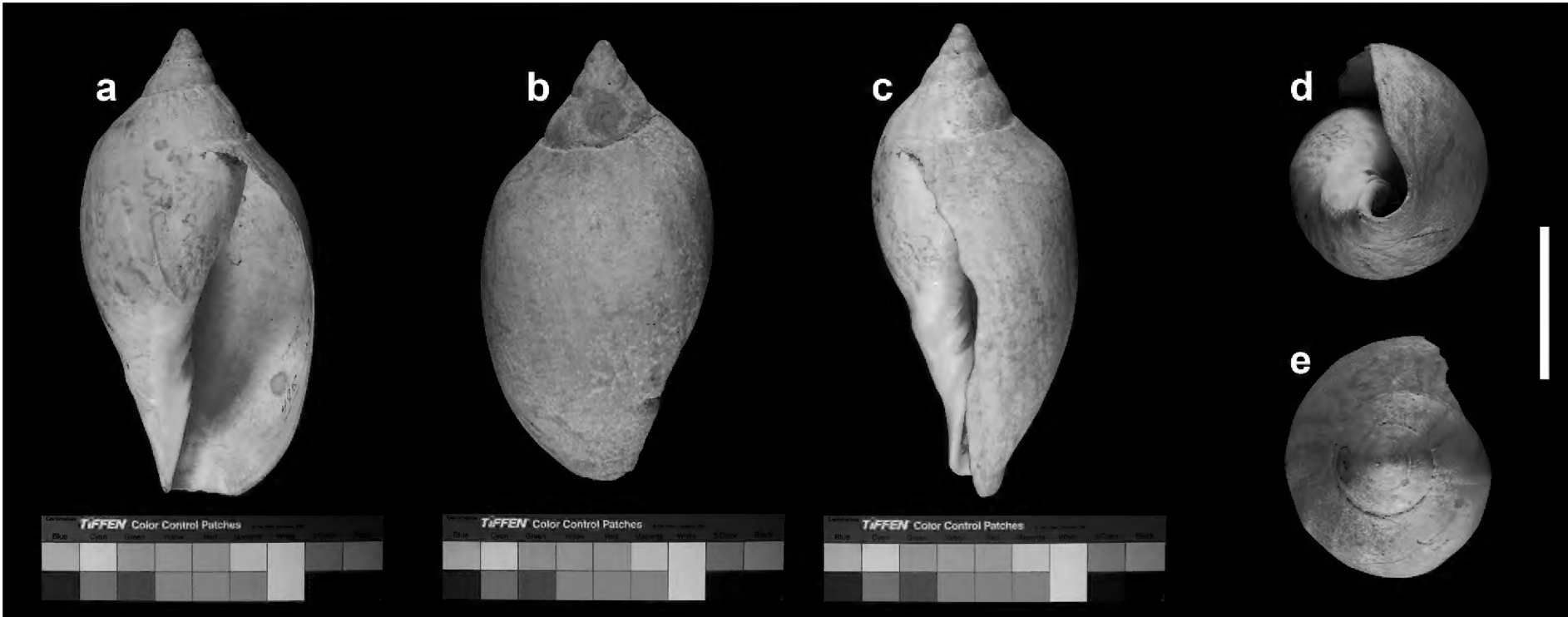


Figure 11. *Voluta ancilla inflata*, holotype. **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

Voluta ancilla inflata Lahille, 1895

Holotype: MLP-Ma 14243, 142.5 mm long, not figured by Lahille (1895) (Fig. 11).

The last whorl of the spire has a dilation that is much more accentuated upwards, and forms a false carina. The shells are thin and generally with three columellar folds.

Voluta ancilla ponderosa Lahille, 1895

Syntypes: MLP-Ma 10861, 4 specimens figured by Lahille (1895) (Table 3); 2 other specimens not figured by Lahille (Figs 12, 13).

This variety differs from the variety *typica* by having heavier shells and in being larger, with specimens over 190 mm long. The specimens that Lahille (1895) figured in plate VIII, figures 170 and 173 have not been found.

Table 3. *Voluta ancilla ponderosa*, specimens from the MLP Collection figured by Lahille (1895) with the details of the inscriptions on their shells and figures here.

Figure of Lahille (1895)	Detail	Figure
Pl. VIII, fig. 171	"1.Curvata. 171"	12
Pl. VIII, fig. 183	"9.Ponderosa. 258. 183"	13a
Pl. VIII, fig. 180	"3.Ponderosa"	13b
Pl. VIII, fig. 178	"460"	13c

Voluta angulata (Swainson, 1821)

Current name: *Zidona dufresnei* (Donovan, 1823).
This species has a shell with longitudinal orange-brown lines, and without nodes. Lahille (1895) described seven varieties.

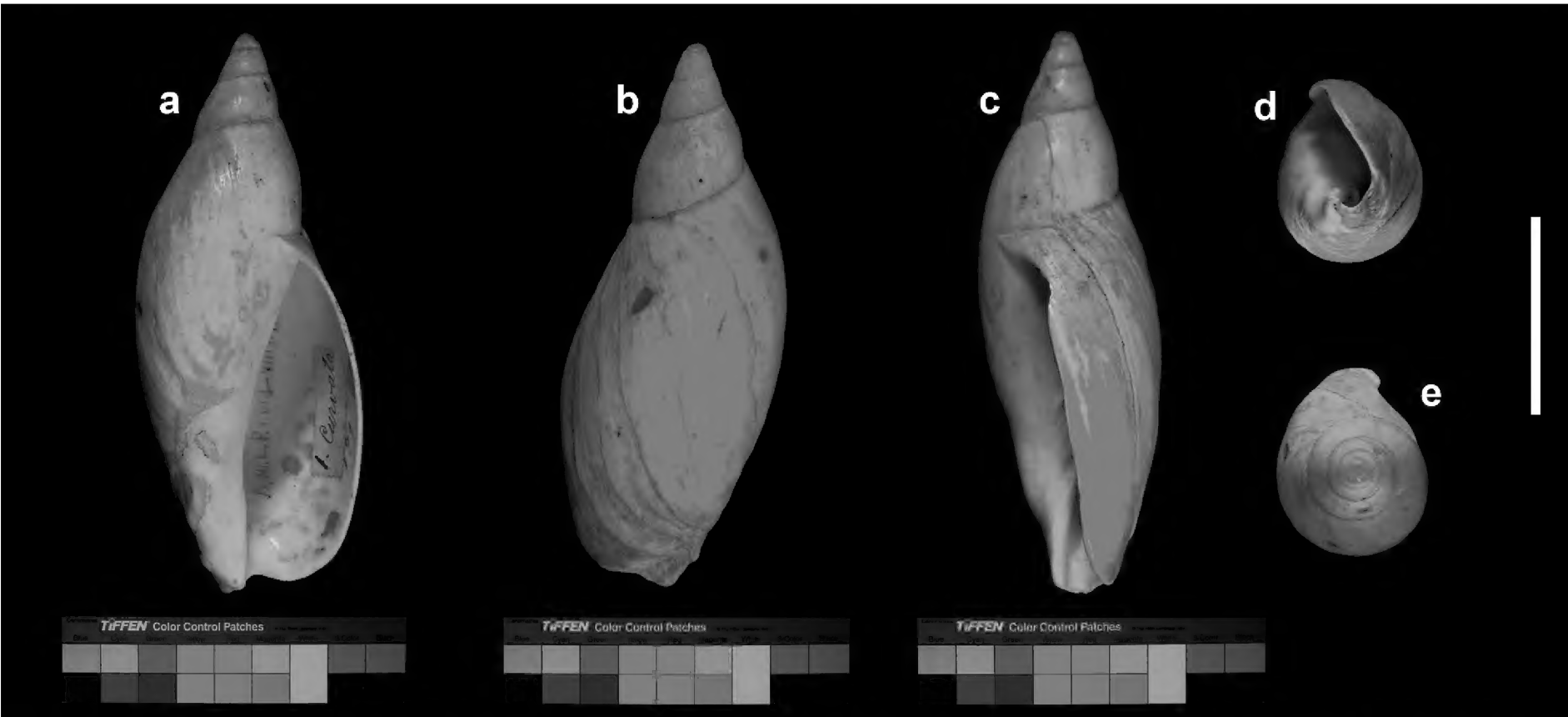


Figure 12. *Voluta ancilla ponderosa*, specimen figured by Lahille (1895: pl. VIII, fig. 171), shell reads “*curvata*”. **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

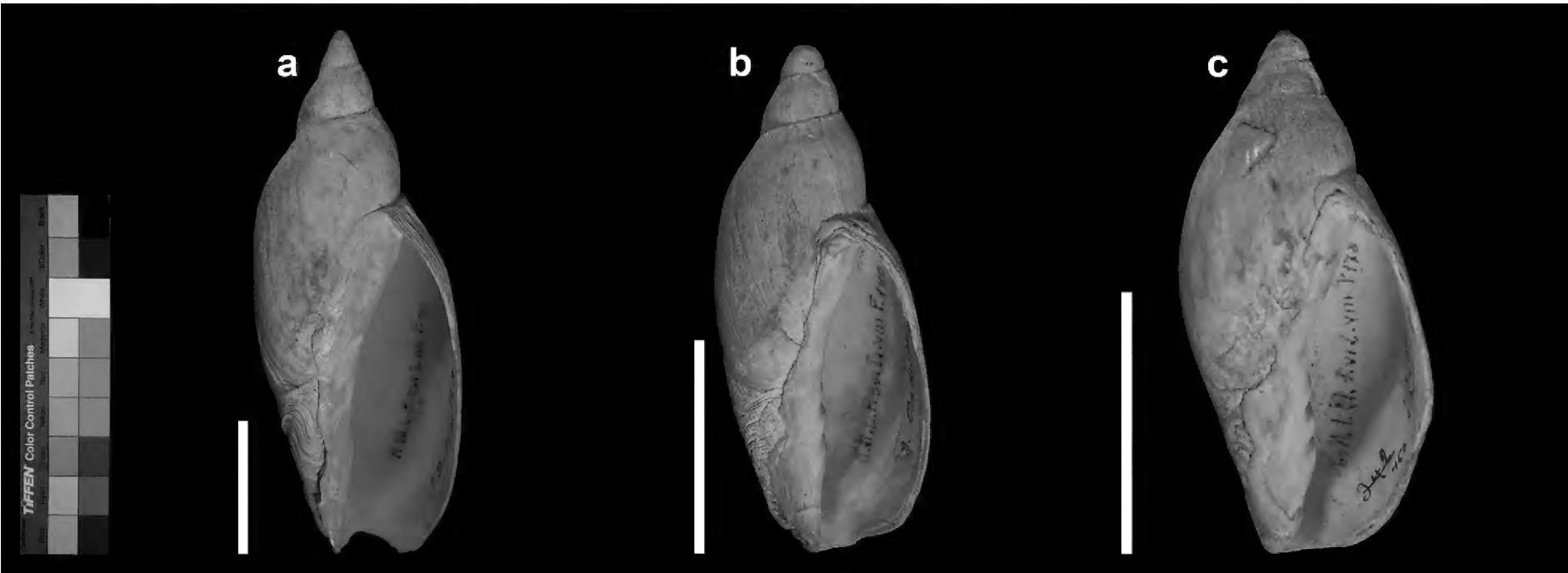


Figure 13. *Voluta ancilla ponderosa*, specimens figured by Lahille (1895: pl. VIII). **a** Correspond to fig. 183 **b** Corresponds to fig. 180 **c** Corresponds to fig. 178. Scale bars: 5 cm.

Voluta angulata typica Lahille, 1895

Syntypes: MLP-Ma 10869, 11 specimens figured by Lahille (1895) (Table 4); 4 other specimens not figured by Lahille. Specimens from 36 to 142 mm long (Figs 14, 15).
Lahille described this variety with fusiform or subturbinated shells, with a smooth surface (almost completely covered by the mantle). The colour is pale yellow with dark longitudinal zigzag lines. The last whorl is strongly carinate, almost perpendicular to shell axis. The aperture is broadly ear-shaped, with a triangular slit on the upper side, and three equal columellar folds. The total length of the shell is shorter than twice the width.

Voluta angulata affinis Lahille, 1895

Syntypes: MLP-Ma 10870, 8 specimens figured by Lahille (1895) (Table 5), from 39 to 94 mm long (Figs 16, 17).

Table 4. *Voluta angulata typica*, specimens figured by Lahille (1895) with the details of the inscriptions on their shells and figures here.

Figure in Lahille (1895)	Detail	Figure
Pl. VI, fig. 104; pl. IX, fig. 4	“9. <i>Angul. typica</i> (1°s). 104”	14
Pl. VI, fig. 99	“4. <i>Angul. typica</i> (1°s)”	15a
Pl. II, fig. 74a; pl. VI, fig. 110	“5. <i>Angul. typica</i> (1°s)” (according to legend of plate VI, fig. 110, it corresponds to the <i>distincta</i> variety)	15b
Pl. VI; fig. 101	“7. <i>Angul. typica</i> (1°s)”	15c
Pl. VI; fig. 102	“2. <i>Ang. nebulosa</i> . 102”	15d
Pl. II, fig. 74b; pl. VI, fig. 103; pl. IX, fig. 7	“8. <i>Angul. typica</i> (1°s)”	15e
Pl. I, fig. 5; pl. VI, fig. 106	“11. <i>Angul. typica</i> (1°s)” (according to legend of fig. 5, it corresponds to the <i>luteola</i> variety)	15f
Pl. VI, fig. 98	“2. <i>Angul. typica</i> (1°s)”	15g
Pl. XII, fig. 33	“8. <i>Typica</i> <i>jov.</i> ”	15h
Pl. II, fig. 72	“ <i>Typ.</i> ”	15i
Pl. II, fig. 69; pl. XII, fig. 30	“5.”	15j

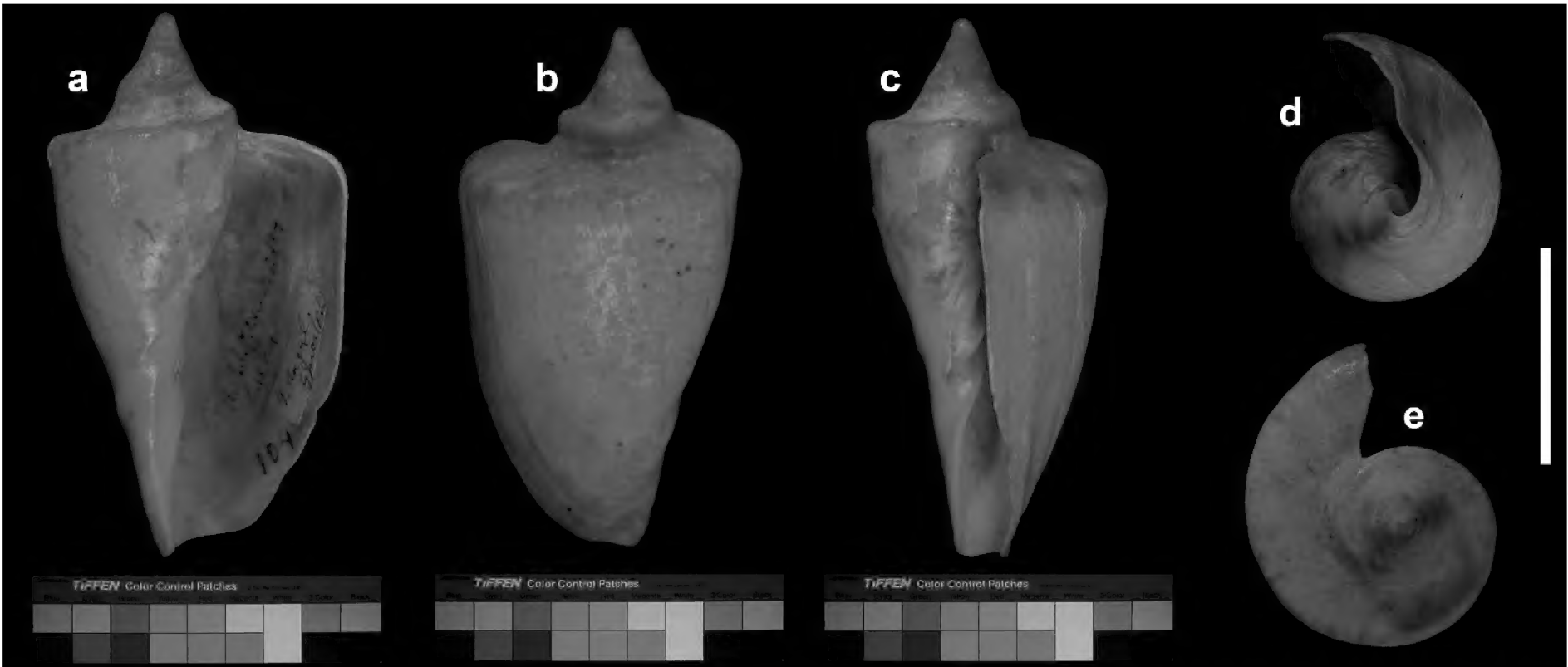


Figure 14. *Voluta angulata typica*, specimen figured by Lahille (1895: pl. VI, fig. 104; pl. IX, fig. 4) **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

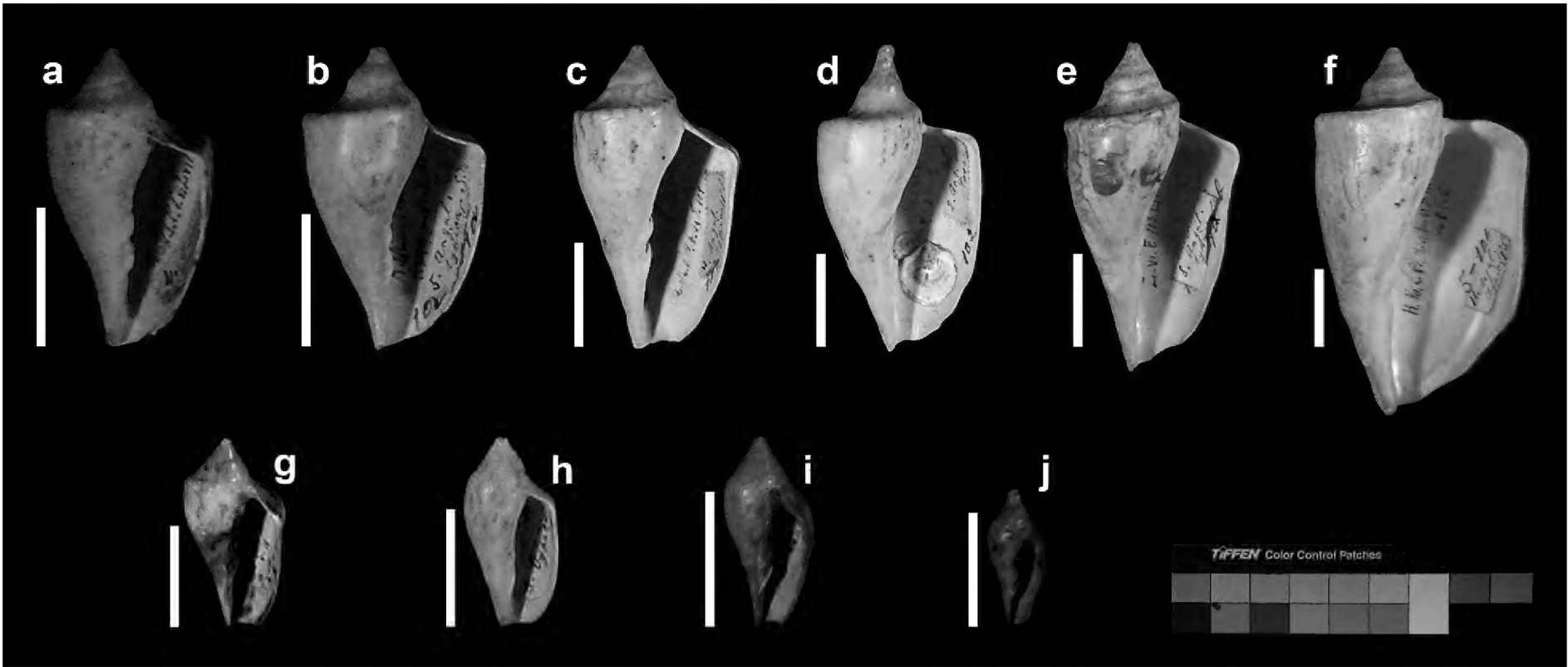


Figure 15. *Voluta angulata typica*, specimens figured by Lahille (1895). See references on Table 4. Scale bars: 3 cm.

According to Lahille’s description, the shells are thick-walled, dark, and can be up to 100 mm long by 45 mm wide. The upper part of the last whorl is regularly concave.

Voluta angulata distincta Lahille, 1895

Syntypes: MLP-Ma 10871, 4 specimens figured by Lahille (1895) (Table 6), from 72 to 146 mm long (Figs 18, 19).

The specimens are elongated, with shells thinner than those of the *typica* variety. The aperture is narrow, almost regular oval. The carina of the last whorl is not evident and forms a roundish angle. The last whorl of the spire is convex.

Carcelles (1944) treated this taxon as valid in his study of marine molluscs of the southern coast of Buenos Aires.

Table 5. *Voluta angulata affinis* specimens figured by Lahille (1895) with the details of the inscriptions on their shells and figures here.

Figure in Lahille (1895)	Detail	Figure
Pl. II, fig. 75b; pl. VI, fig. 91; pl. VIII, fig. 160; pl. IX, fig. 9	“7.affinis”	16
Pl. II, fig. 76	“2.affinis”	17a
Pl. II, fig. 75; pl. VI, fig. 87	“3.affinis”	17b
Pl. VI, fig. 88	“4.affinis”	17c
Pl. II, fig. 78; pl. VI, fig. 89	“5. affinis” (Fig. 78 reads <i>Voluta angulata ventricosa</i>)	17d
Pl. II, fig. 75a; pl. VI, fig. 90	“6.affinis”	17e
Pl. II, fig. 71; pl. XII, fig. 31	“6”	17f
Pl. VI, fig. 85	“1.affinis”	17g

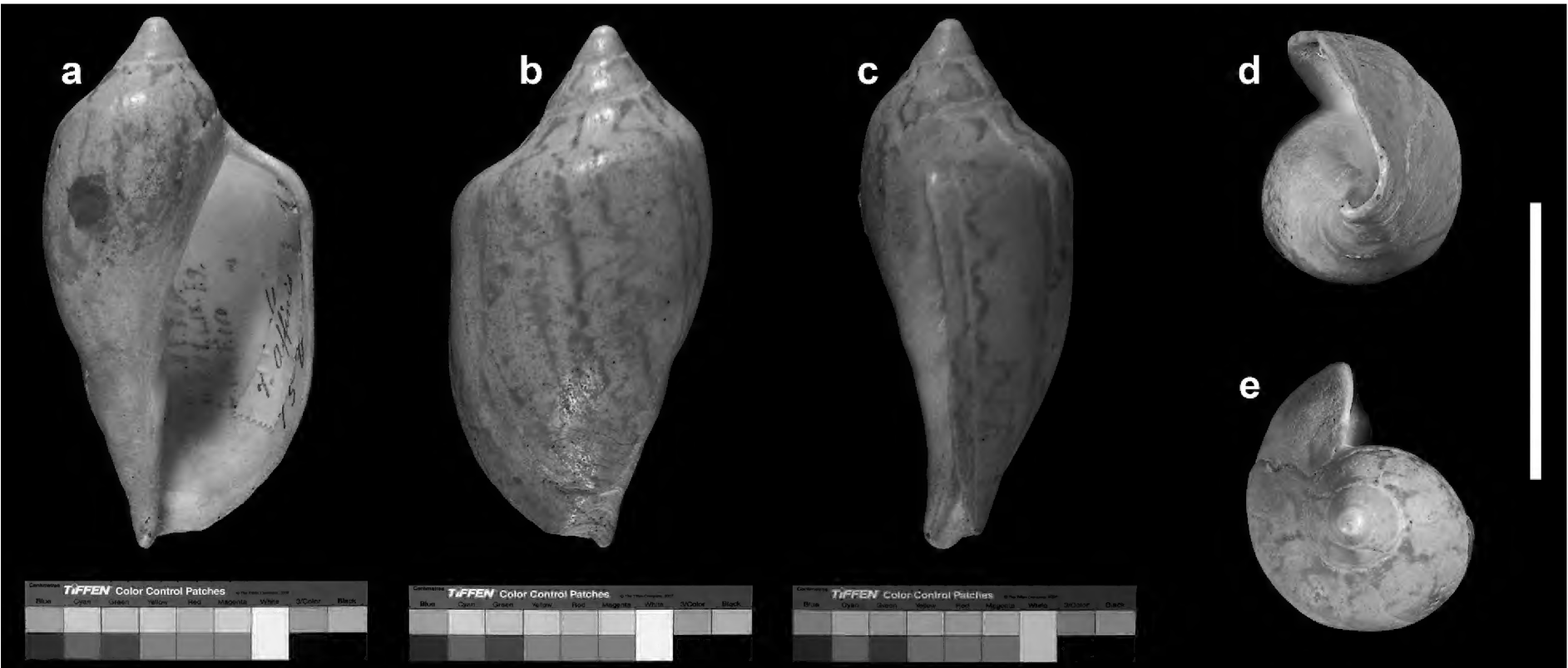


Figure 16. *Voluta angulata affinis*, specimen figured by Lahille (1895: pl. II, fig. 75b; pl. VI, fig. 91; pl. IX, fig. 9; pl. VIII, fig. 160). **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm

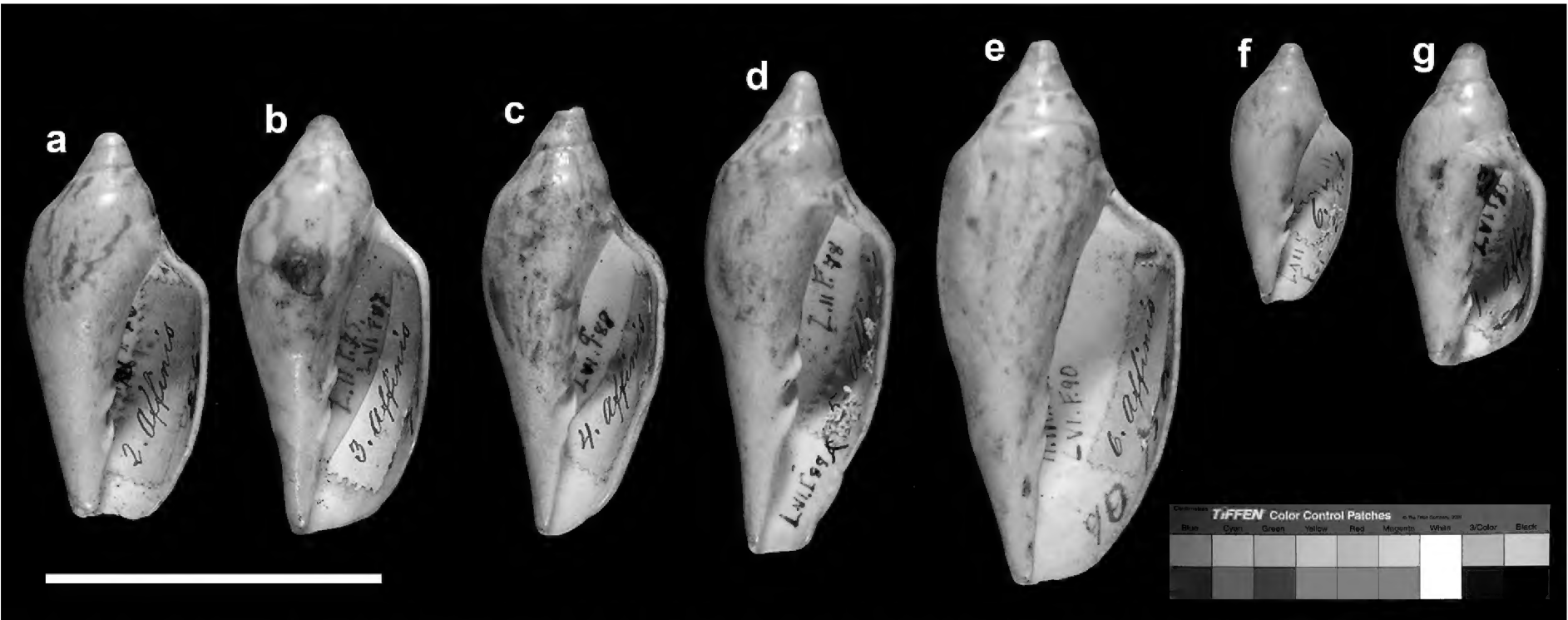


Figure 17. *Voluta angulata affinis*, specimens figured by Lahille (1895). See references on Table 5. Scale bar: 5 cm.

Table 6. *Voluta angulata distincta*, specimens figured by Lahille (1895) with the detail of the inscriptions in their shells and figures here.

Figure of Lahille (1895)	Detail	Figure
Pl. I, fig.8; pl. VI, fig.117; pl. IX, fig. 6	"4.distincta typica"	18
Pl. VI, fig. 118	"1.distincta typica" (Figure legend reads <i>Voluta angulata ventricosa</i>)	19a
Pl. VI, fig.116	"3.distincta typica"	19b
Pl. II, fig. 77a; pl. VIII, fig.169	"distincta"	19c

Voluta angulata luteola Lahille, 1895

Syntypes: MLP-Ma 10868, 5 specimens figured by Lahille (1895) (Table 7), 4 other specimens not fig-

Table 7. *Voluta angulata luteola*, specimens figured by Lahille (1895) with the detail of the inscriptions on their shells and figures here.

Figure of Lahille (1895)	Detail	Figure
Pl. VI, fig. 114	"1. Ang. luteola"	20
Pl. VI, fig. 79	"10. calcarea" (variety not described)	21a
Pl. VI, fig. 81	"7. calcarea" (variety not described)	21b
Pl. II, fig. 73b	"5. Ang. luteola" (it also reads Pl. VII, Fig. 115, however, fig. 115 is in pl. VI and corresponds to the <i>similis</i> variety)	21c
Pl. VI, fig. 81	"5. calcarea" (variety not described)	21d

ured by Lahille. Specimens from 99 to 151 mm long (Figs 20, 21).

According to Lahille (1895), the shells are longer than twice their width, and the last whorls are carinate. The upper columellar folds are not evident.

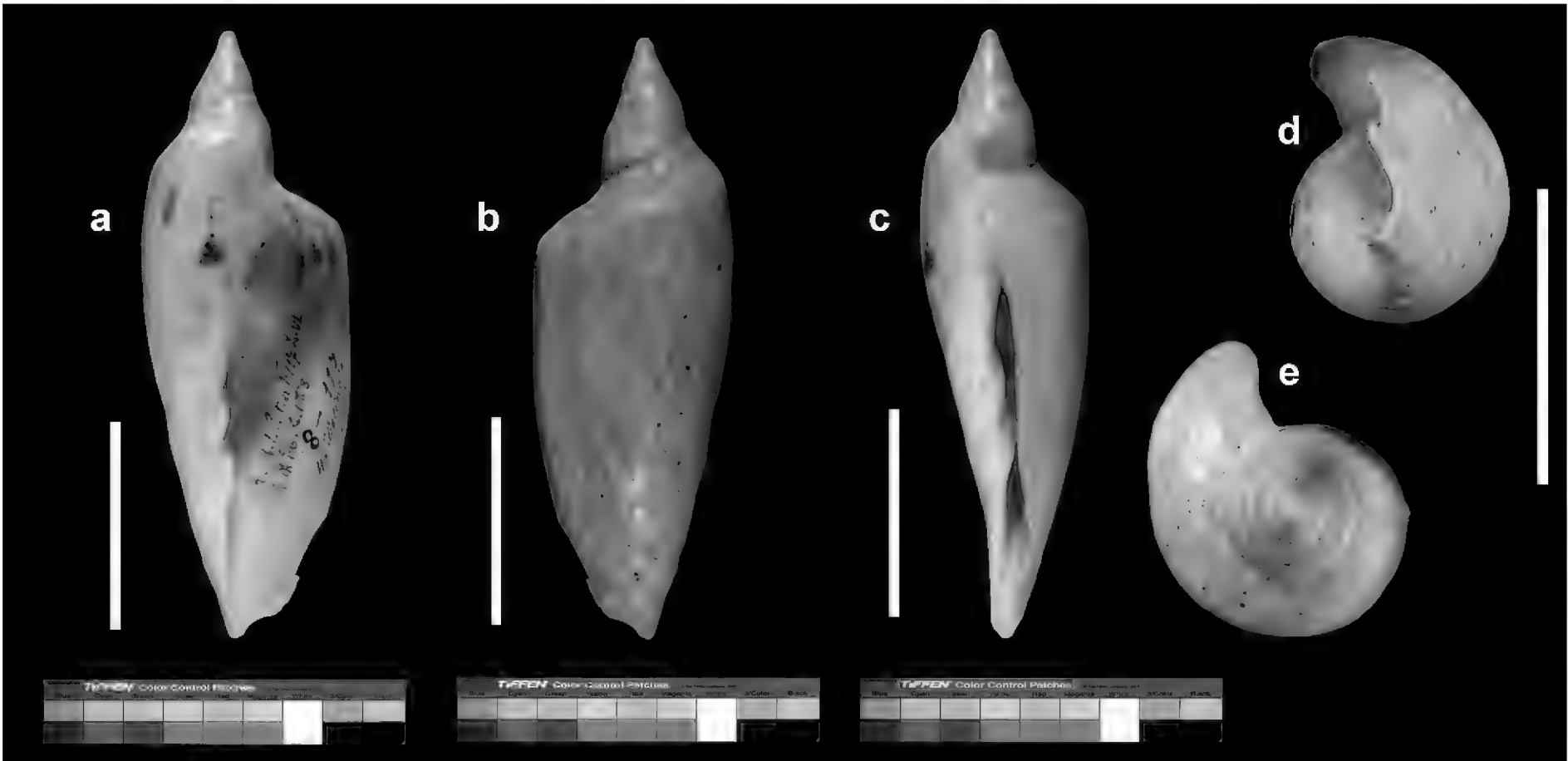


Figure 18. *Voluta angulata distincta*, specimen figured by Lahille (1895: pl. I, fig. 8; pl. VI, fig. 117; pl. IX, fig. 6). **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bars: 5 cm.

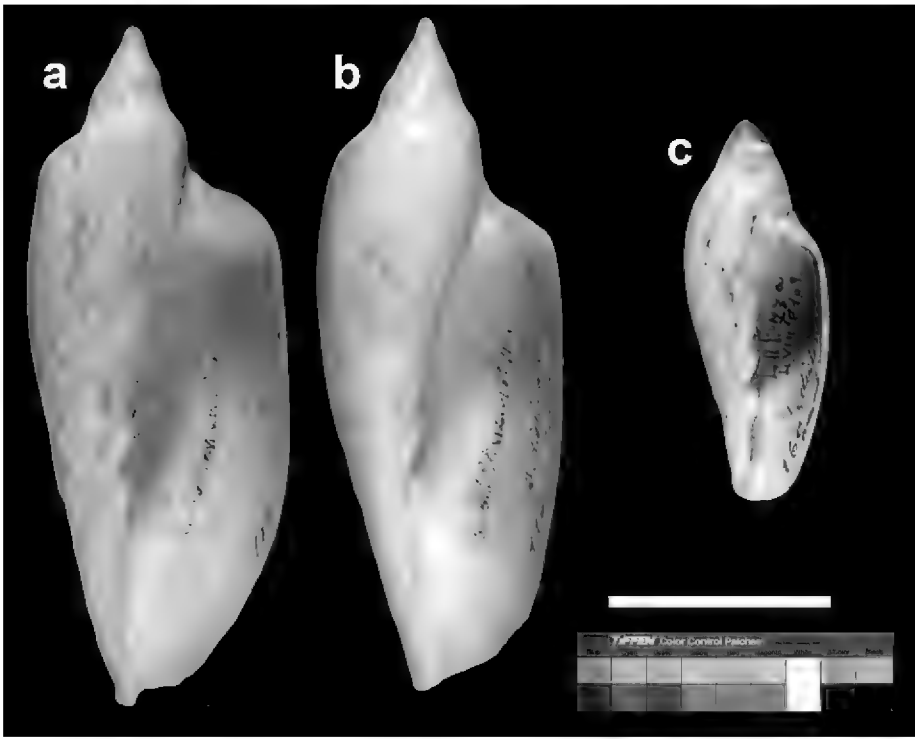


Figure 19. *Voluta angulata distincta*, specimens figured by Lahille (1895). See references on Table 6. Scale bar: 5 cm.

Voluta angulata mixta Lahille, 1895

Holotype: MLP-Ma 10864, ca 70 mm long, figured by Lahille (1895: pl. IX, fig. 8, pl. VI, fig. 82) (Fig. 22).
The total shell length of this variety is almost as long as twice its width. The first few whorls are convex, and the aperture white.

Voluta angulata similis Lahille, 1895

Syntypes: MLP-Ma 10865, 5 specimens figured by Lahille (1895) (Table 8), from 70 to 135 mm long (Figs 23, 24).
The proportions of the shell of this variety are similar to *luteola*, but the carina is strongly oblique to the columellar axis.

Table 8. *Voluta angulata similis*, specimens figured by Lahille (1895) with the detail of the inscriptions on their shells and figures here.

Figure in Lahille (1895)	Detail	Figure
Pl. IX, fig.5	–	23
Pl. VI, fig. 84	“2. <i>Ang. luteola</i> ” (however fig. 84 corresponds to the <i>similis</i> variety)	24a
Pl. VI, fig. 83	“5. <i>typica juven</i> ” (however fig. 83 corresponds to the <i>similis</i> variety)	24b
Pl. VI, fig. 113	“14. <i>typica juven</i> ” (however fig. 113 corresponds to the <i>similis</i> variety)	24c
Pl. VI, fig. 112	“12. <i>typica juven</i> ” (however fig. 112 corresponds to the <i>similis</i> variety)	24d

Table 9. *Voluta angulata ventricosa*, figured by Lahille (1895), with the detail of the inscriptions on their shells and figures here.

Figure of Lahille (1895)	Detail	Figure
Pl. VI, fig.93	“3. <i>Ventricosa</i> ”	25
Pl. VI, fig.94	“4. <i>Ventricosa</i> ”	26a
Pl. VI, fig.109	“6. <i>Ang. nebulosa</i> ” (variety not described, legend on fig. 109 indicates variety <i>ventricosa</i>)	26b
Pl. II, fig.78b; pl. VI, fig.92	“2. <i>Subventricosa</i> ” (variety not described, legends of figs 92 and 78b indicate variety <i>ventricosa</i>)	26c
Pl. VI, fig.108	“3. <i>Ang. nebulosa</i> ” (variety not described, legend of fig. 108 indicates variety <i>ventricosa</i>)	26d
Pl. II, fig.78a	–	26e

Voluta angulata ventricosa Lahille, 1895

Syntypes: MLP-Ma 10873, 6 specimens figured by Lahille (1895) (Table 9); 2 other specimens not figured by Lahille. Specimens from 87 to 147 mm long (Figs 25, 26).

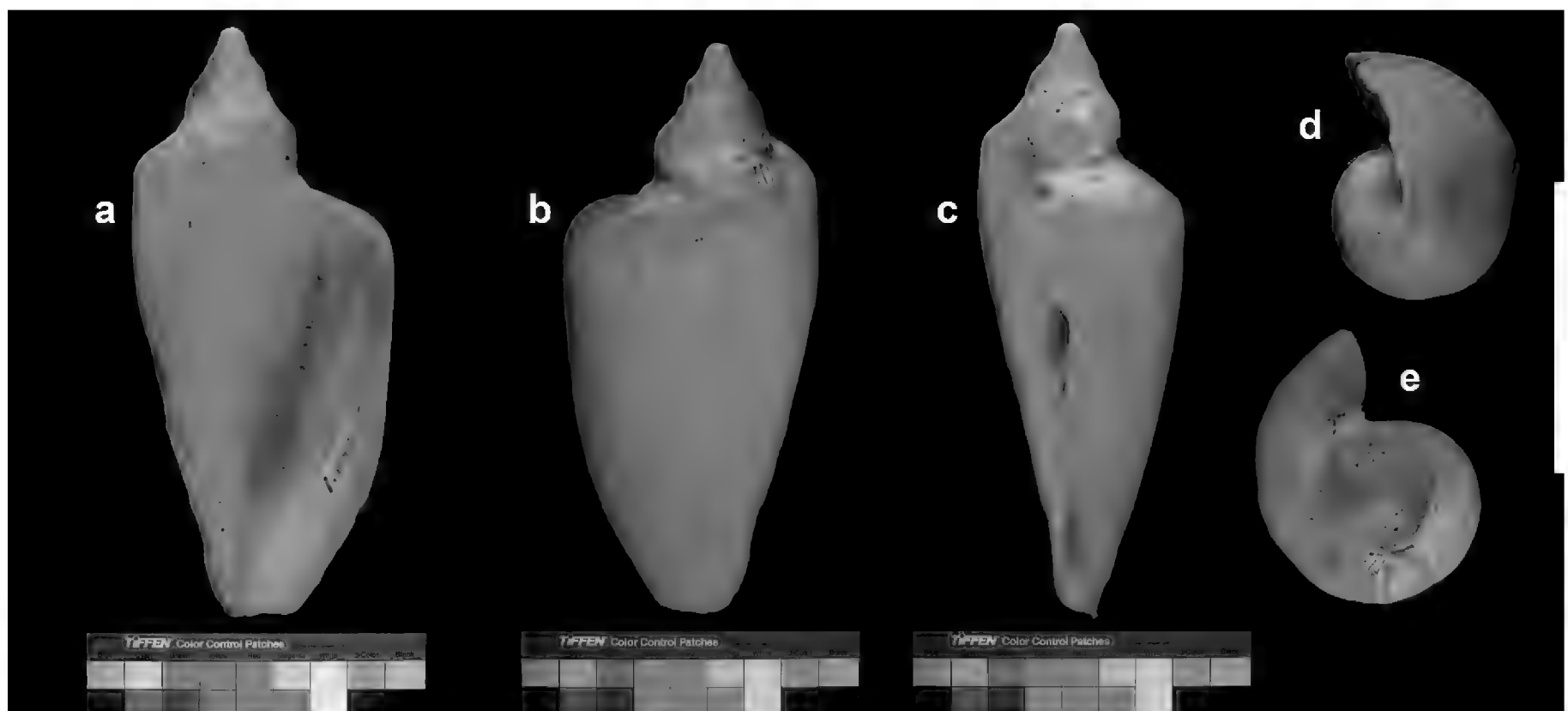


Figure 20. *Voluta angulata luteola*, specimen figured by Lahille (1895: pl. VI, fig. 114). **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

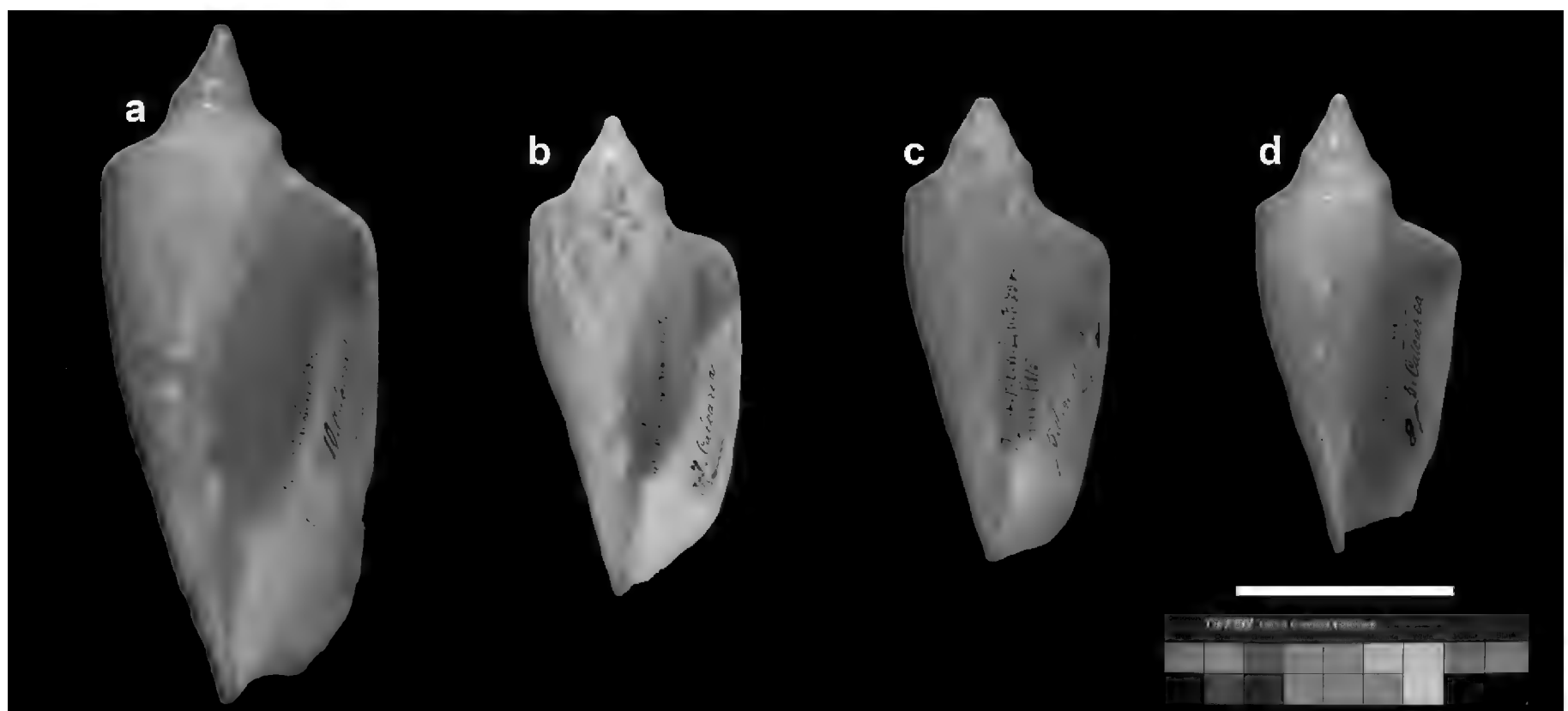


Figure 21. *Voluta angulata luteola*, figured by Lahille (1895). See references on Table 7. Scale bar: 5 cm.

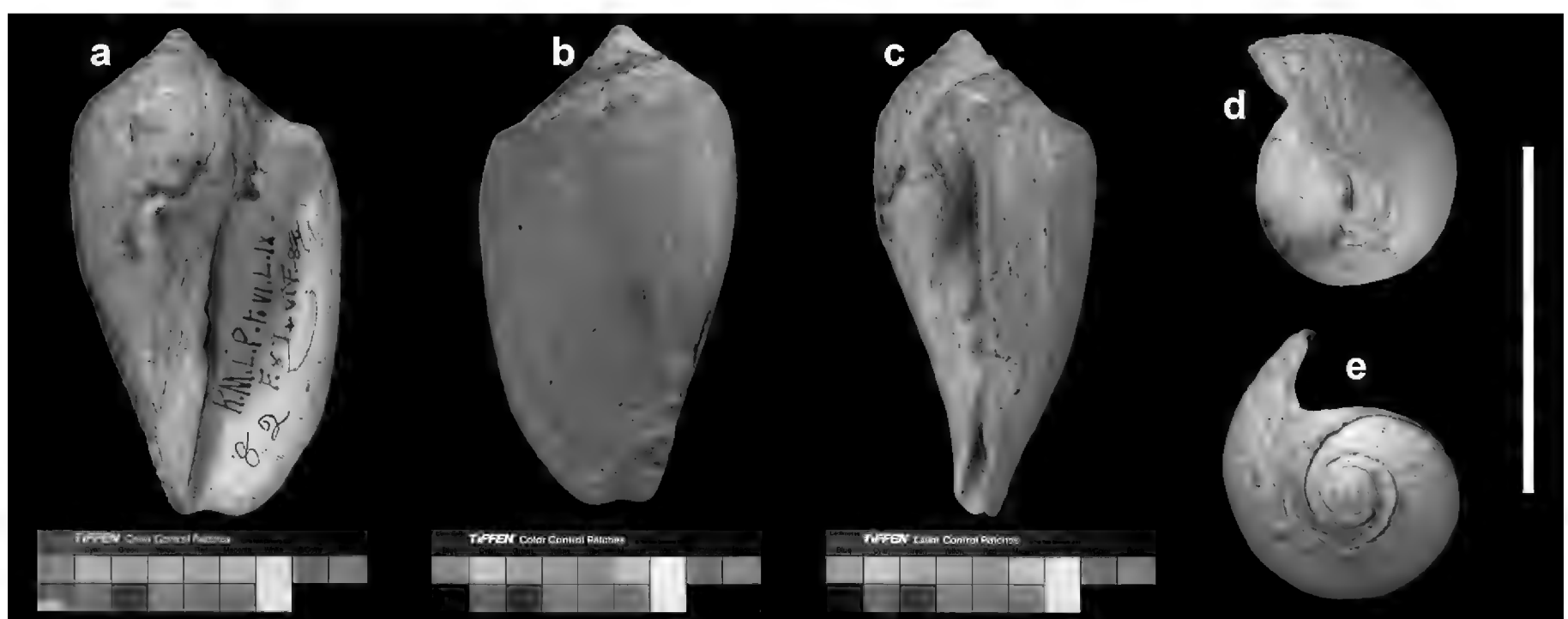


Figure 22. *Voluta angulata mixta*, specimen figured by Lahille (1895: pl. IX, fig. 8; pl. VI, fig. 82). **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

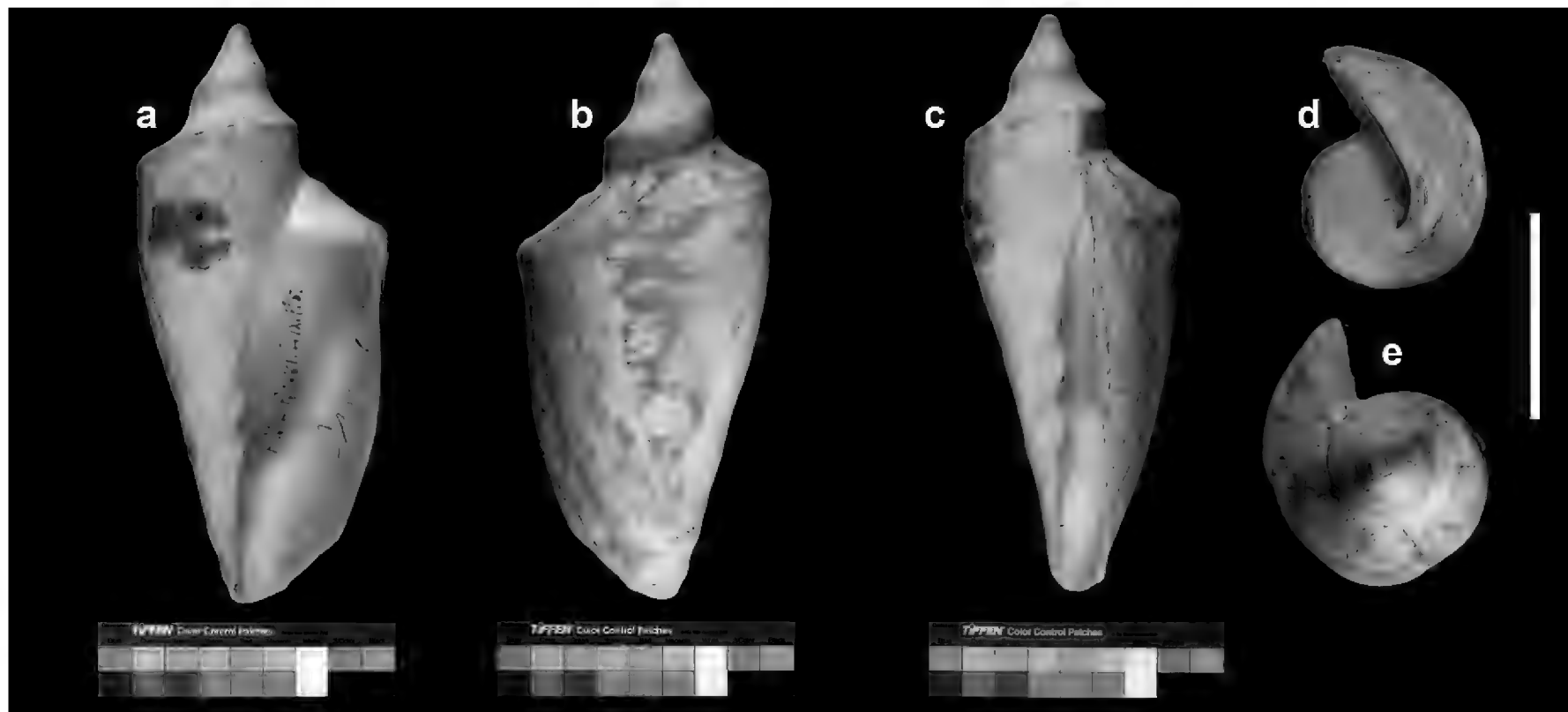


Figure 23. *Voluta angulata similis*, specimen figured by Lahille (1895: pl. IX, fig. 5). **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

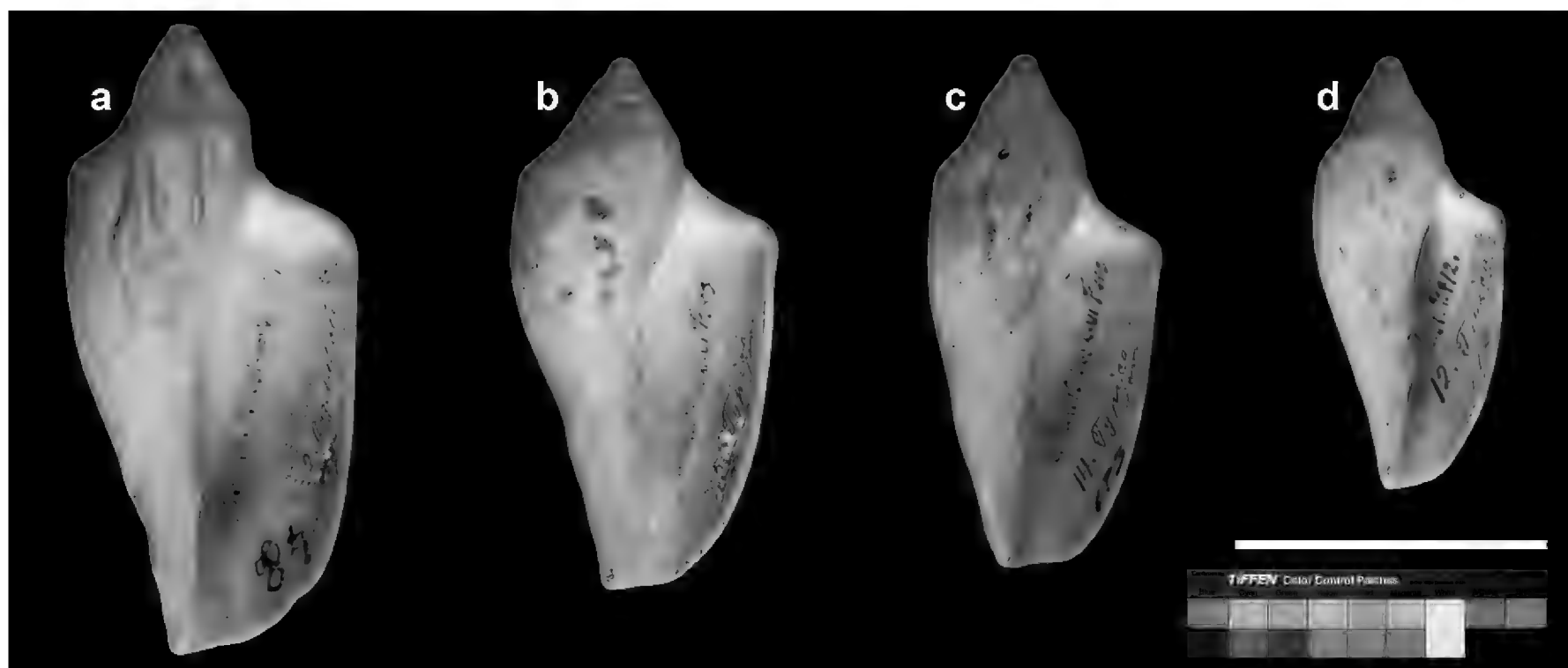


Figure 24. *Voluta angulata similis*, specimens figured by Lahille (1895). See Table 8 for references. Scale bar: 5 cm.

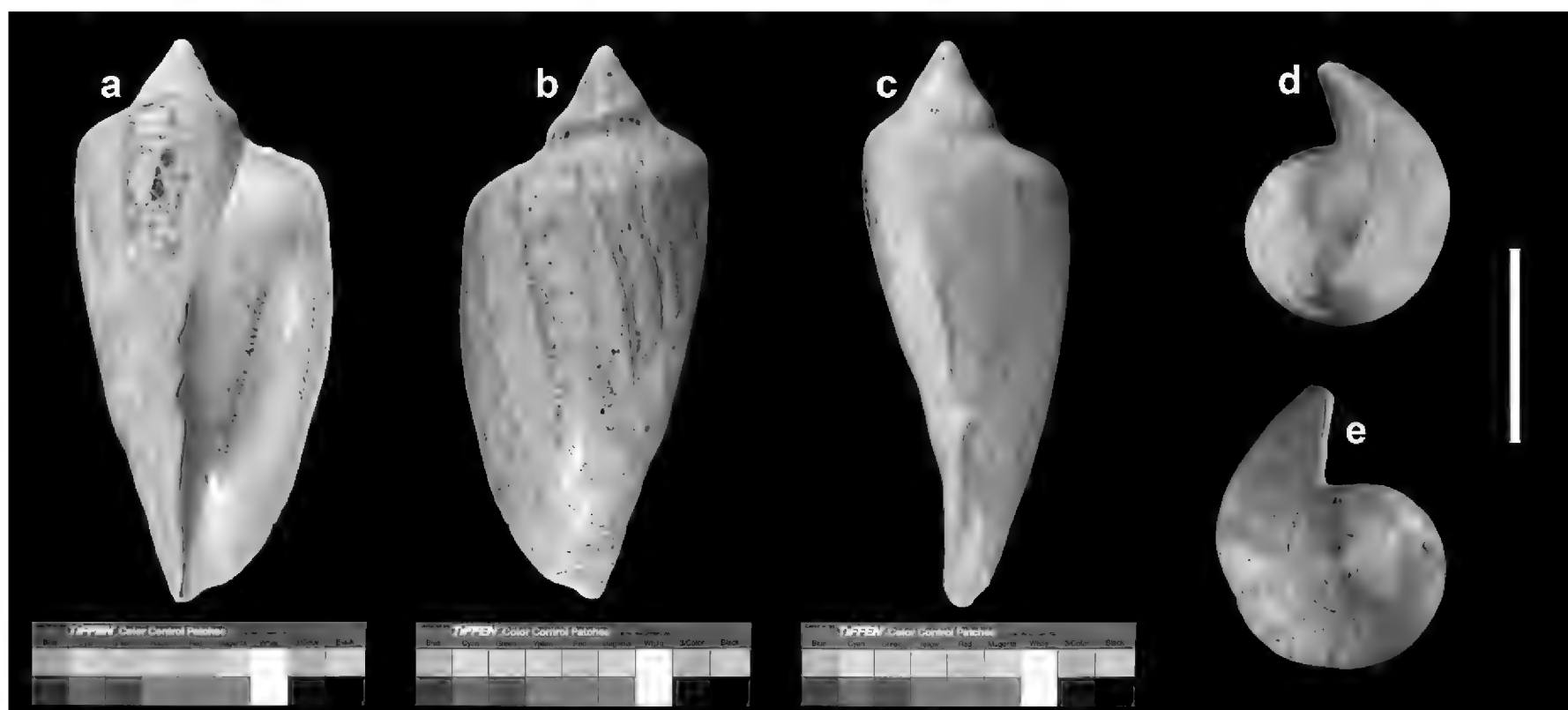


Figure 25. *Voluta angulata ventricosa*, specimen figured by Lahille (1895: pl. VI, fig. 93). **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

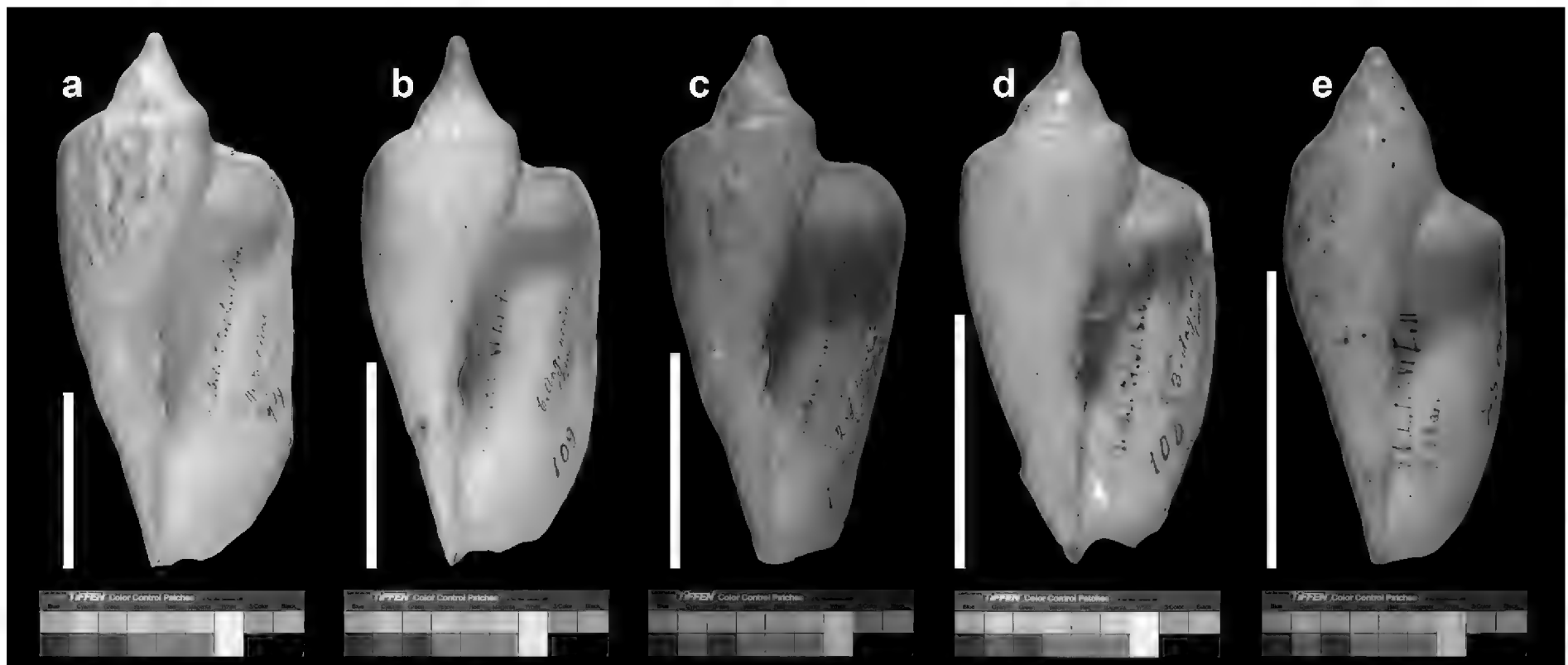


Figure 26. *Voluta angulata ventricosa*, specimens figured by Lahille (1895). See references on Table 9. Scale bars: 5 cm.

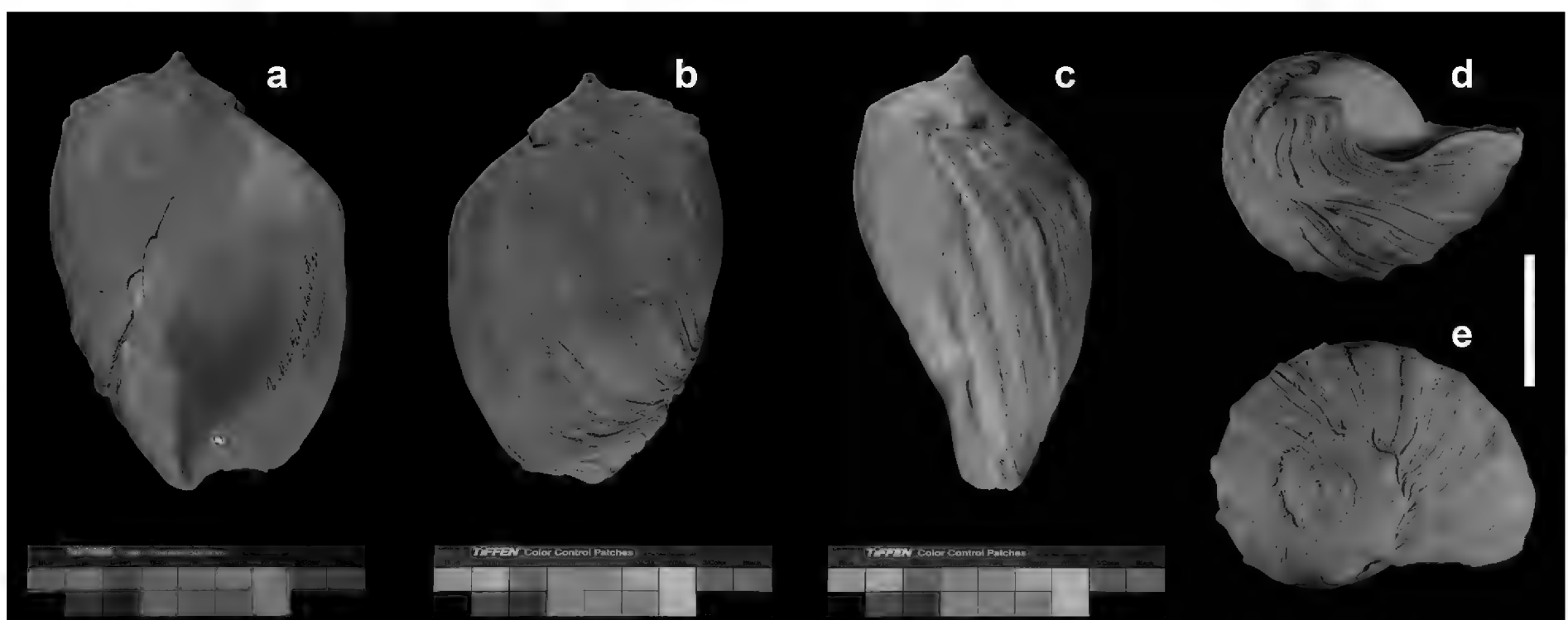


Figure 27. *Voluta colocynthis typica*, specimen figured by Lahille (1895: pl. V, fig. 38) **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

This variety is similar to *luteola*, but the last whorl is more expanded and not carinate. The free edge of the aperture forms a curve.

There are five shells that have not been assigned to any variety of this species (MLP-Ma 10872). Two of them were not figured by Lahille (1895). Inscriptions on the remaining three specimens read:

1. “10.*typica* *juv.*” pl. II, fig. 73 [= *luteola*], pl. VI, fig. 111 [= *similis*].
2. Plate II, fig. 51 [the legend does not indicate the variety].
3. Plate II, fig. 69b [depicts a juvenile specimen].

There are three groups of shells corresponding to *V. angulata* (MLP-Ma 14245). On these shells, are the following inscriptions: “*calcareo*”, “*subventricosa*”, and “*nebulosa*”. These specimens were never described nor figured by Lahille (1895).

Voluta colocynthis (Favane, 1772) Chemnitz

Current name: *Pachycymbiola brasiliensis* (Lamarck, 1811).

Lahille (1895) characterised shells of this species as whitish to dark yellow or orange, uniformly coloured, and with juveniles without tubercles. He described nine varieties for this species.

Voluta colocynthis typica Lahille, 1895

Syntypes: MLP-Ma 10876, 11 specimens figured by Lahille (1895) (Table 10), from 45 to 157 mm long; 15 other specimens, adults and juveniles, not figured in Lahille (Figs 27, 28).

According to Lahille (1895), this variety can reach up to 170 mm in length and 130 mm in width. The first three whorls of the spire are smooth; the last whorl covers entirely the tubercles of penultimate whorl. The suture is almost never undulated. The aperture is roughly

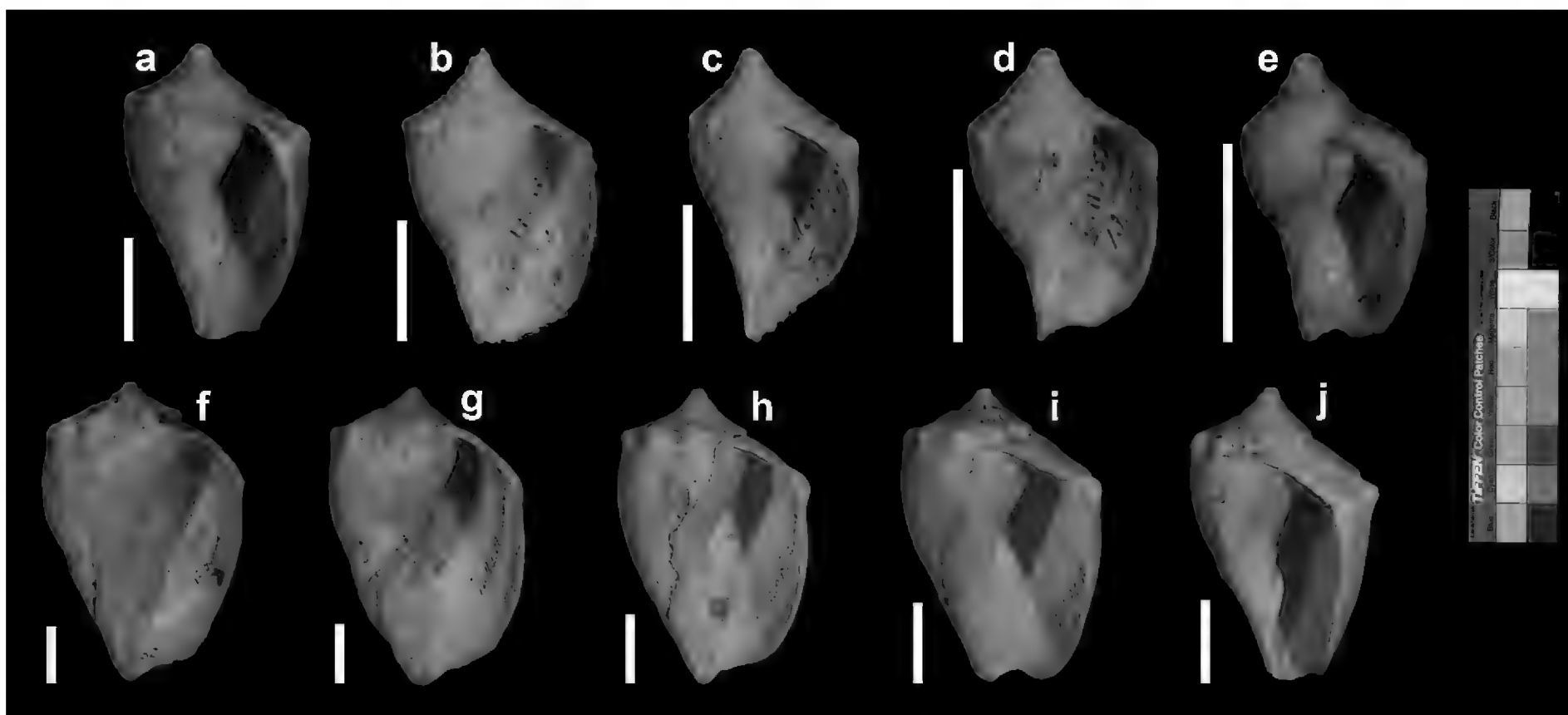


Figure 28. *Voluta colocynthis typica*, specimens figured by Lahille (1895). See references on Table 10. Scale bars: 3 cm.

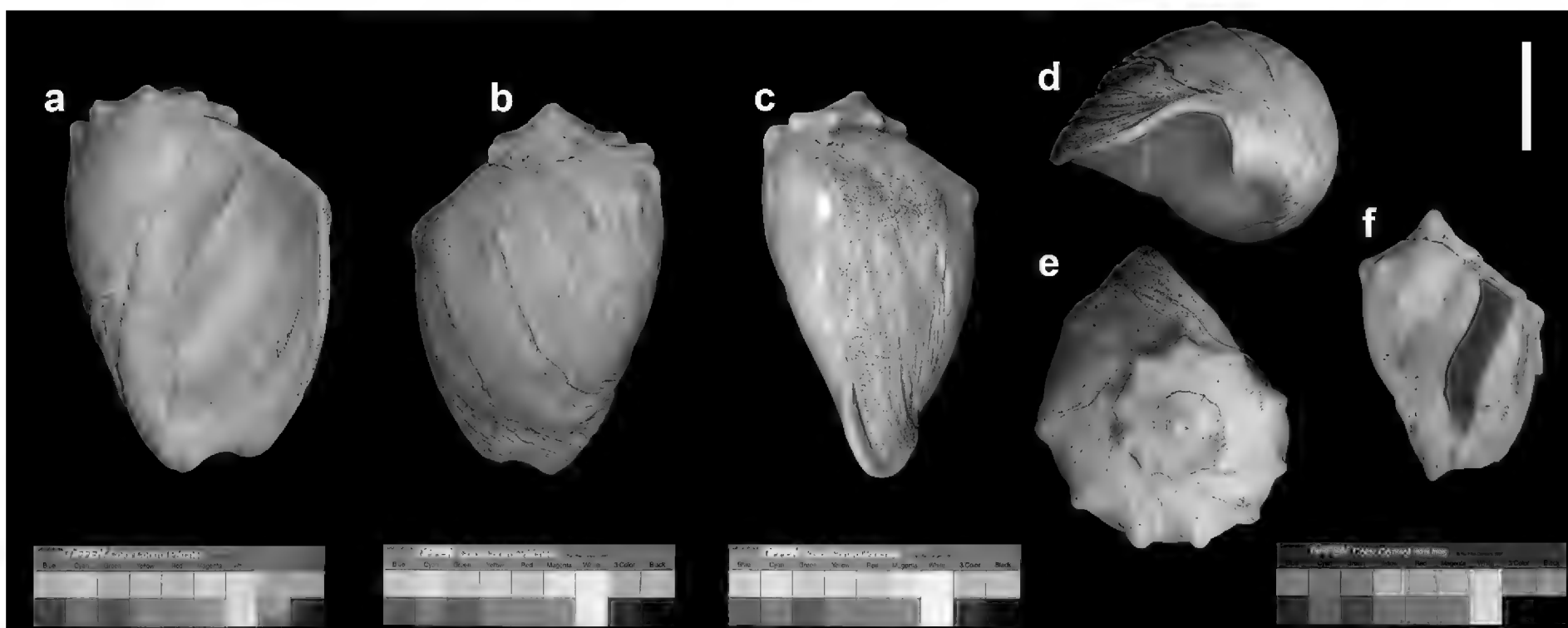


Figure 29. *Voluta colocynthis alternata*, specimens not figured by Lahille (1895). **a–e** Specimen 1 **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view **f** Apertural view of specimen 2. Scale bar: 5 cm.

semilunar and white to yellowish-orange. Generally, the shells have two unequal columellar folds. Sometimes the inferior fold fuses with the columella, so it is not visible, while in others, there are two wrinkles on each side of the upper fold. This variety differs from *V. tuberculata* in the absence of zigzag lines on the shell.

Voluta colocynthis alternata Lahille, 1895

Syntypes: MLP-Ma 14247, 2 specimens not figured by Lahille (1895) (Fig. 29).

Lahille described the shells of this variety as more elongated and less conical than those of var. *carinata*. The penultimate whorl is always visible. The nodes of the last two whorls arise usually alternate, giving the name of this variety.

However, this variety was unfigured by Lahille (1895). The only specimen with this name on its shell also has the inscription “L V, F 31”, which indicates its use in plate V, figure 31, which is *typica* according to the plate’s legend.

Voluta colocynthis carinata Lahille, 1895

Holotype: MLP-Ma 10881, 110.5 mm long x 78 mm wide, figured by Lahille (1895: pl. V, fig. 36). Label reads: “511”, “1.*carinata*” (Fig. 30).

Lahille (1895) described this variety as having a conic shell and with the penultimate whorl of the spire almost always separated from the last whorl of the spire. The external edge of the aperture forms an almost straight angle on the upper side, and the tubercles are on the carina.

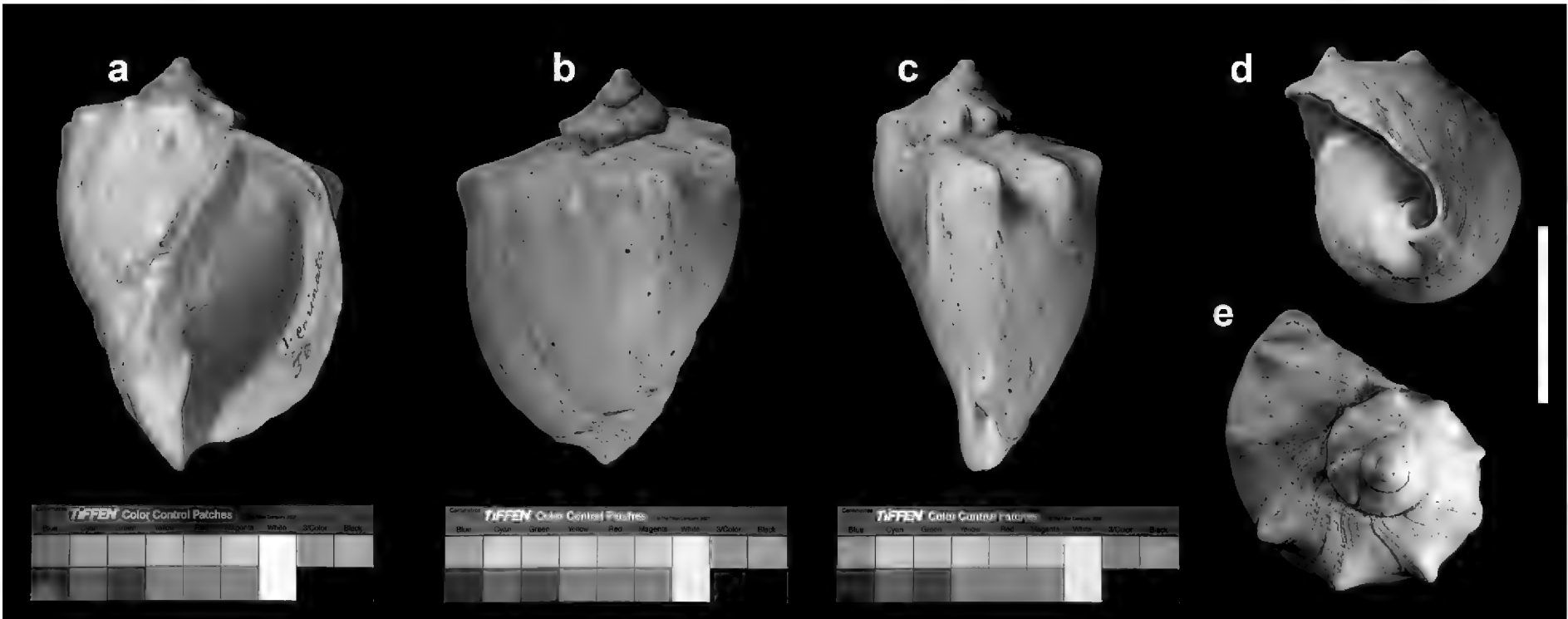


Figure 30. Holotype of *Voluta colocynthis carinata*, figured by Lahille (1895: pl. V, fig. 36) **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

Table 10. *Voluta colocynthis typica*, specimens figured by Lahille (1895) with the detail of the inscriptions on their shells and figures here.

Figure in Lahille (1895)	Detail	Figure
Pl. V, fig. 38	“24. <i>typica</i> ” (figure legend indicates <i>Voluta colocynthis subtypica</i> , but this variety is not described in the text)	27
Pl. V, fig. 29	“17. <i>typica</i> ”	28a
Pl. II, fig. 60; pl. V, fig. 28	“16. <i>typica</i> ”	28b
Pl. II, fig. 59; pl. V, fig. 27	“4. <i>typica</i> ”	28c
Pl. II, fig. 58	“13. <i>typica</i> ”	28d
Pl. II, fig. 57	“11. <i>typica</i> ”	28e
Pl. V, fig. 35	“12. <i>typica</i> ”	28f
Pl. V, fig. 34	“11. <i>typica</i> ”	28g
Pl. V, fig. 33	“457”	28h
Pl. V, fig. 32	“ <i>typica</i> ”	28i
Pl. V, fig. 31	“3. <i>alternata</i> ”(figure legend indicates <i>Voluta colocynthis typica</i>)	28j

Voluta colocynthis depressa Lahille, 1895

Holotype: MLP-Ma 10877, 143.5 mm long × 102 mm wide, figured by Lahille (1895: pl. V, fig. 39). Label reads: “510”, “1.*depressa*” (Fig. 31).

According to Lahille (1895), the first few whorls of the spire are small, and form a regularly convex surface. The lower part of the columella has a large inferior fold.

Voluta colocynthis globosa Lahille, 1895

Syntypes: MLP-Ma 10880, 2 specimens figured by Lahille (1895) (Table 11). Specimens over 170 mm long, width approximately 65% of total length (Fig. 32).

Lahille (1895) described this variety as similar to *V. colocynthis intermedia*, but the shells are much more

Table 11. *Voluta colocynthis globosa*, specimens figured by Lahille (1895) with the detail of the inscriptions on their shells and figures here.

Figure in Lahille (1895)	Detail	Figure
Pl. V, fig. 49	“1. <i>globosa</i> ” 508	32a-e
Pl. I, fig. 3	“2. <i>globosa</i> ” 509	32f

globose and always with tubercles on the last whorl of the spire. The first part of the last whorl rarely has nodes. The specimens are large, up to 200 mm long and 132 mm wide.

Voluta colocynthis intermedia Lahille, 1895

Syntypes: MLP-Ma 10882, 4 specimens figured by Lahille (1895) (Table 12); 4 other specimens not figured by Lahille (Figs 33, 34).

According to Lahille (1895), the shells of this variety are ovoid, up to 160 mm long and 110 mm wide, always without tubercles on the final half the last whorl or with tubercles rudimentary only. The free edge of the aperture is usually rounded. The penultimate whorl of the spire is completely hidden by the last one, the suture is rarely undulated, and there are two columellar folds which are mostly unequal.

Voluta colocynthis lactea Lahille, 1895

Syntypes: MLP-Ma 10878, 2 specimens figured by Lahille (1895) (Table 13), label reads: “*zonaria*”, which does not appear in Lahille’s publication. Both shells are up to 70 mm long (Fig. 35).

Lahille described *lactea* variety based on five specimens from Mar Chiquita, Buenos Aires Province. The shells are matte white, with a striped appearance due to growth lines. The free edge of the aperture is regularly rounded. The columella is arched, with three equal folds.

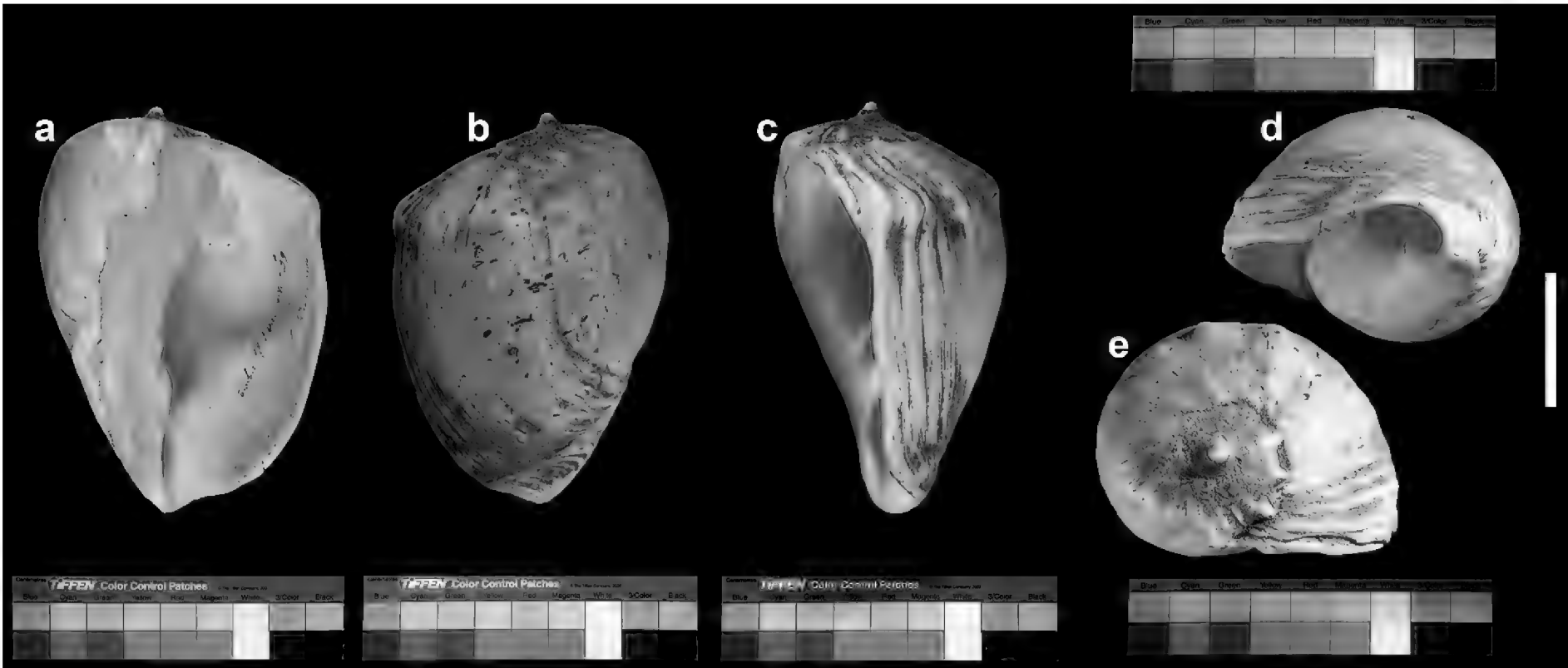


Figure 31. Holotype of *Voluta colocynthis depressa*, figured by Lahille (1895: pl. V, fig. 39) **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

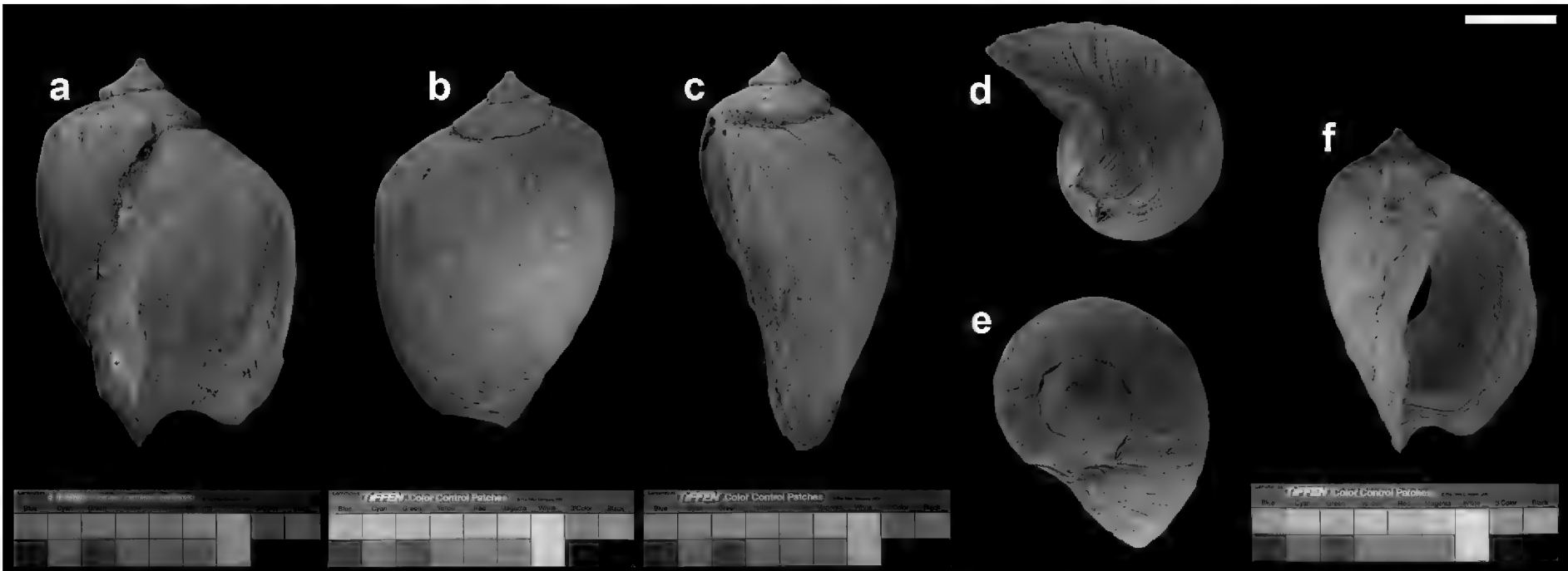


Figure 32. *Voluta colocynthis globosa*. **a–e** Specimen figured by Lahille (1895: pl. V, fig. 49) **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view **f** Specimen figured by Lahille (1895: pl. I, fig. 3) in apertural view. Scale bar: 5 cm.

Table 12. *Voluta colocynthis intermedia*, specimens figured by Lahille (1895), with the detail of the inscriptions on their shells and figures here.

Figure of Lahille (1895)	Detail	Figure
Pl. V, fig. 47	“10. <i>Intermedia</i> ”	33
Pl. V, fig. 46	“9. <i>Intermedia</i> ”	34a
Pl. V, fig. 44	“5. <i>Intermedia</i> ”	34b
Pl. V, fig. 42; pl. VII, fig. 138 (this last figure is not mentioned in the legend)	“1. <i>Intermedia</i> ”	34c

The spire has five whorls, the first two smooth and the last three with strong nodes. The suture is undulate. The last whorl is without a carina but with tubercles from which arise rudimentary longitudinal ribs. The specimens are up to 70 mm long and 45 mm wide and heavier than *V. colocynthis typica*.

Table 13. Specimens of *Voluta colocynthis lactea* figured by Lahille (1895), with the detail of the inscriptions on their shells and figures here.

Figure of Lahille (1895)	Detail	Figure
Pl. X, fig. 3	“2. <i>zonaria</i> ”	35a–e
Pl. X, fig. 1	“1. <i>zonaria</i> ”	35f

Voluta colocynthis spirabilis Lahille, 1895

Syntypes: MLP-Ma 10879, 1 specimen figured by Lahille (1895: pl. I, fig. 4; pl. V, fig. 37); 1 other specimen not figured by Lahille, ca 170 mm long × 107 mm wide and labelled: “516” and “2.*spirabilis*” (Fig. 36).

The shells have the spire tall. The nodes on the last whorl of the spire are accentuated and rise above the suture. In large specimens, the upper angle of the aperture is 20–25 mm from the nodes.

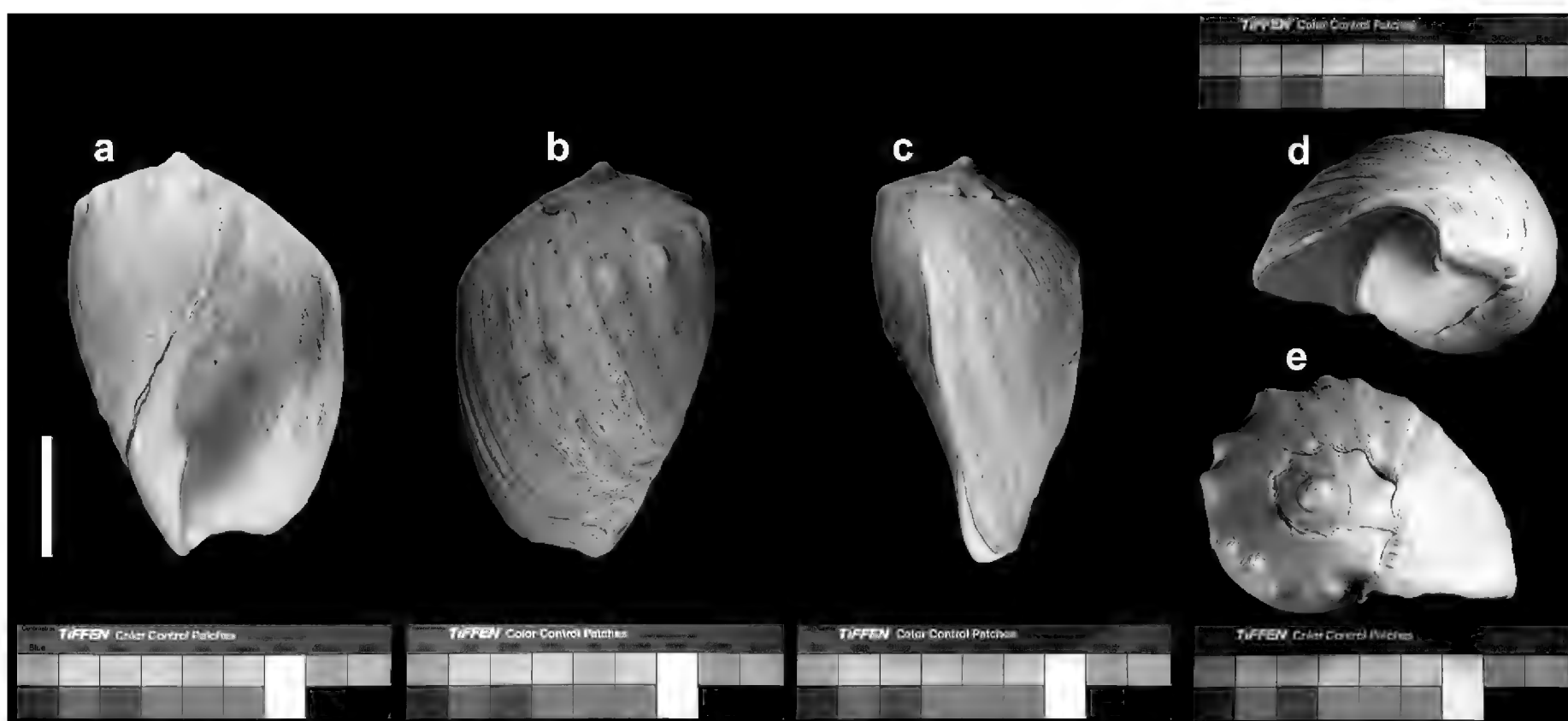


Figure 33. *Voluta colocynthis intermedia*, specimen figured by Lahille (1895: pl. V, fig. 47) **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

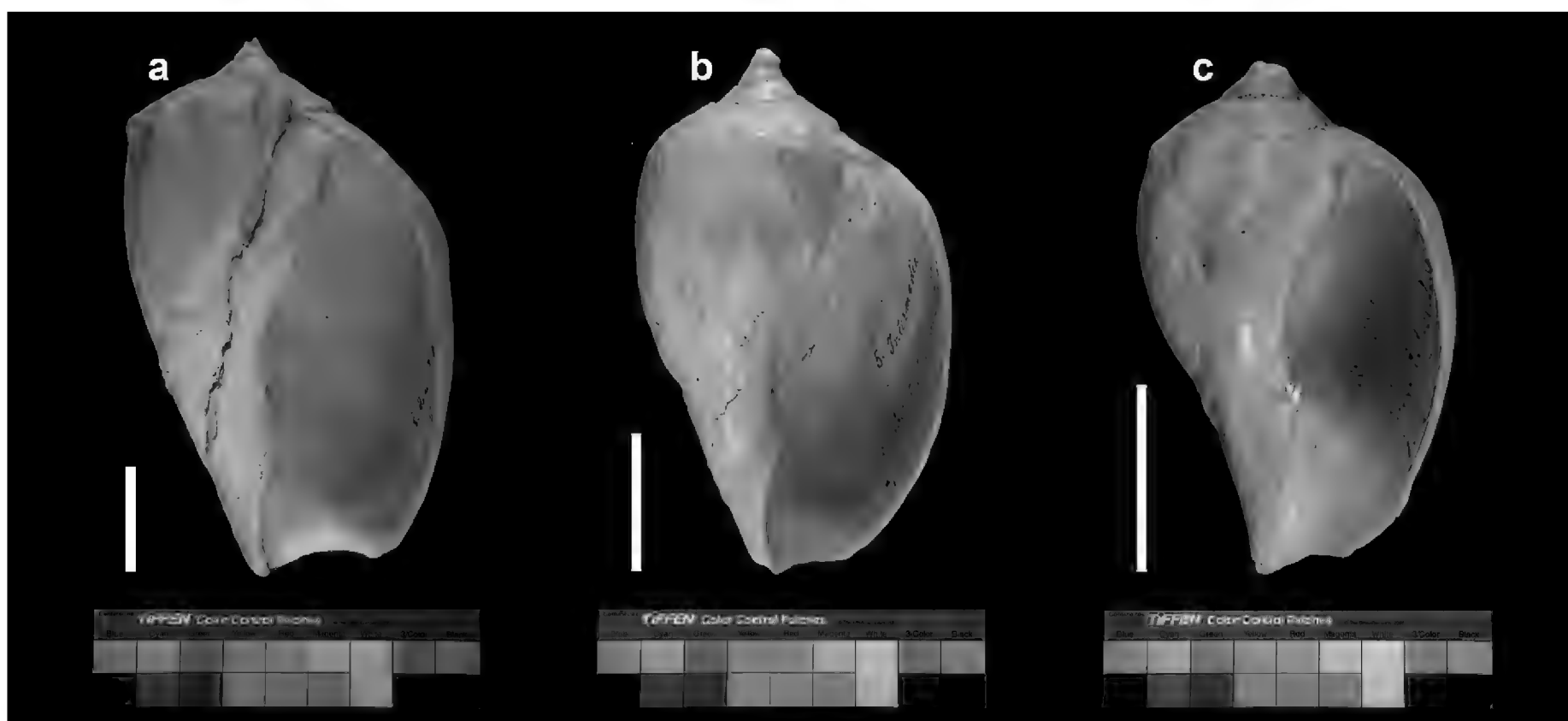


Figure 34. *Voluta colocynthis intermedia*, specimens figured by Lahille (1895). See references on Table 12. Scale bars: 3 cm.

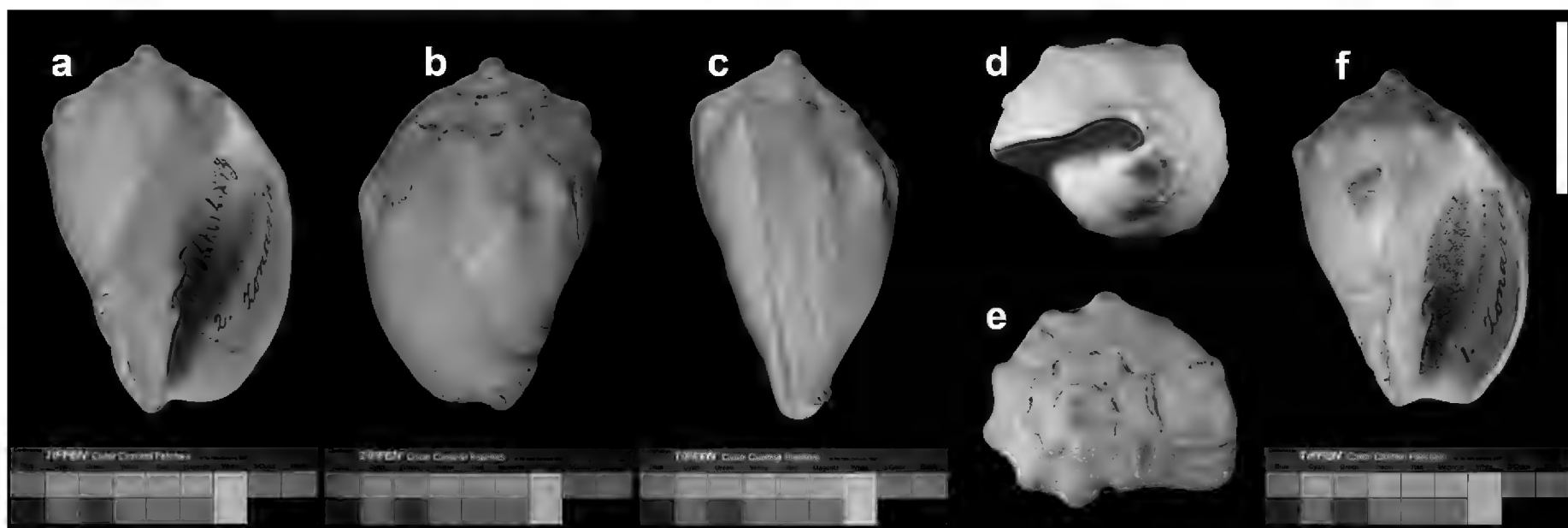


Figure 35. Syntypes of *Voluta colocynthis lactea*. **a–e** Specimen figured by Lahille (1895: pl. X, fig. 3) **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view **f** Specimen figured by Lahille (1895: pl. X, fig. 1) in apertural view. Scale bar: 3 cm.

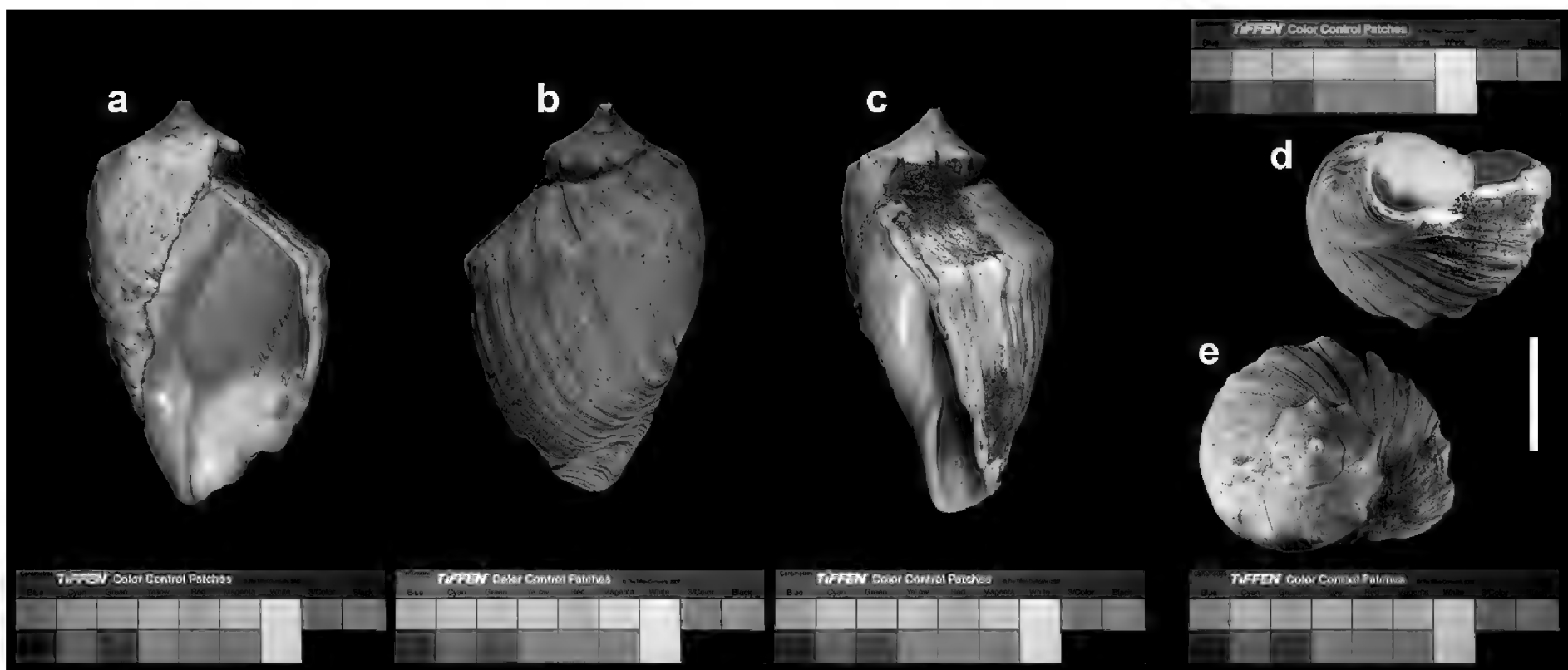


Figure 36. *Voluta colocynthis spirabilis*, specimen figured by Lahille (1895: pl. I, fig. 4; pl. V, fig. 37) **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

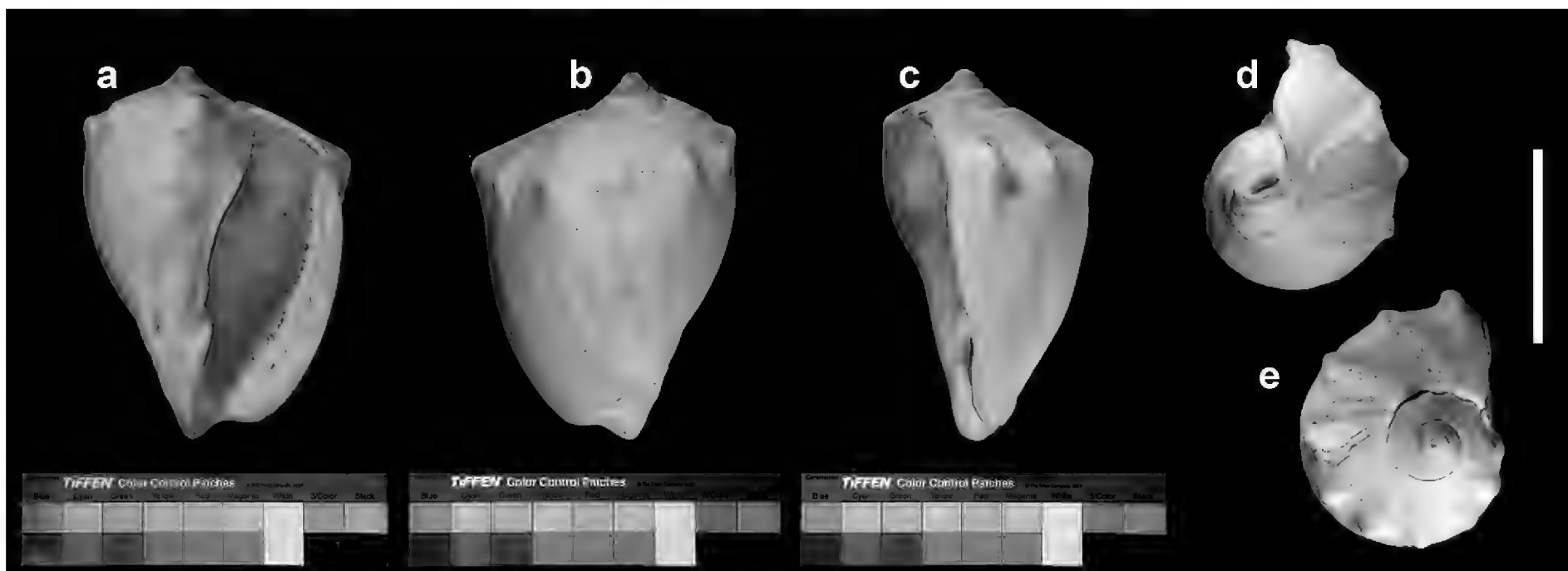


Figure 37. *Voluta colocynthis subcarinata*, specimen figured by Lahille (1895: pl. V, fig. 30) **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

Voluta colocynthis subcarinata Lahille, 1895

Holotype: MLP-Ma 10875, 92 mm long × 66 mm wide, figured by Lahille (1895: pl. V, fig. 30). Label reads: Plate V, Fig. 30 “19.*typica*” (Fig. 37).

Lahille (1895) mentioned only that this variety is intermediate between the *typica* and the *carinata* varieties.

Specimens matching *Voluta colocynthis pseudomagellanica* Lahille, 1895 have not been found in the MLP Collection. There are two shells (MLP-Ma 14246) with inscriptions referring to plate II, figure 50 and plate II, figure 69a but not assigned to any variety of this species.

Voluta fusiformis Kiener, 1839

Current name: *Adelomelon beckii* (Broderip, 1836).

Lahille (1895) mentioned that the shells are up to 350 mm long and 170 mm wide, yellow or sometimes very pale, with yellowish-orange longitudinal zigzag

lines that align to each node. There are narrow, slightly undulating spiral striae, which are sometimes cut by narrow growth lines. The spire of adults has eight whorls; the first three whorls are generally smooth and form a button. The lower sides of the nodes are prolonged into ribs, which are attenuate or disappear in adults. In large individuals, the nodes of the last whorl form a transverse fold.

Voluta fusiformis typica Lahille, 1895

Syntypes: MLP-Ma 14248, 3 specimens not figured by Lahille (1895). One shell reads “Typos Dr Lahille 502 4.*Typica*”, other “Typos Dr Lahille 503”, and other “1.*Fusiform. typica*” (Fig. 38).

According to Lahille (1895), the shell of this variety has no tubercles on the last whorl, or rarely, a small carina marks a tubercle line.

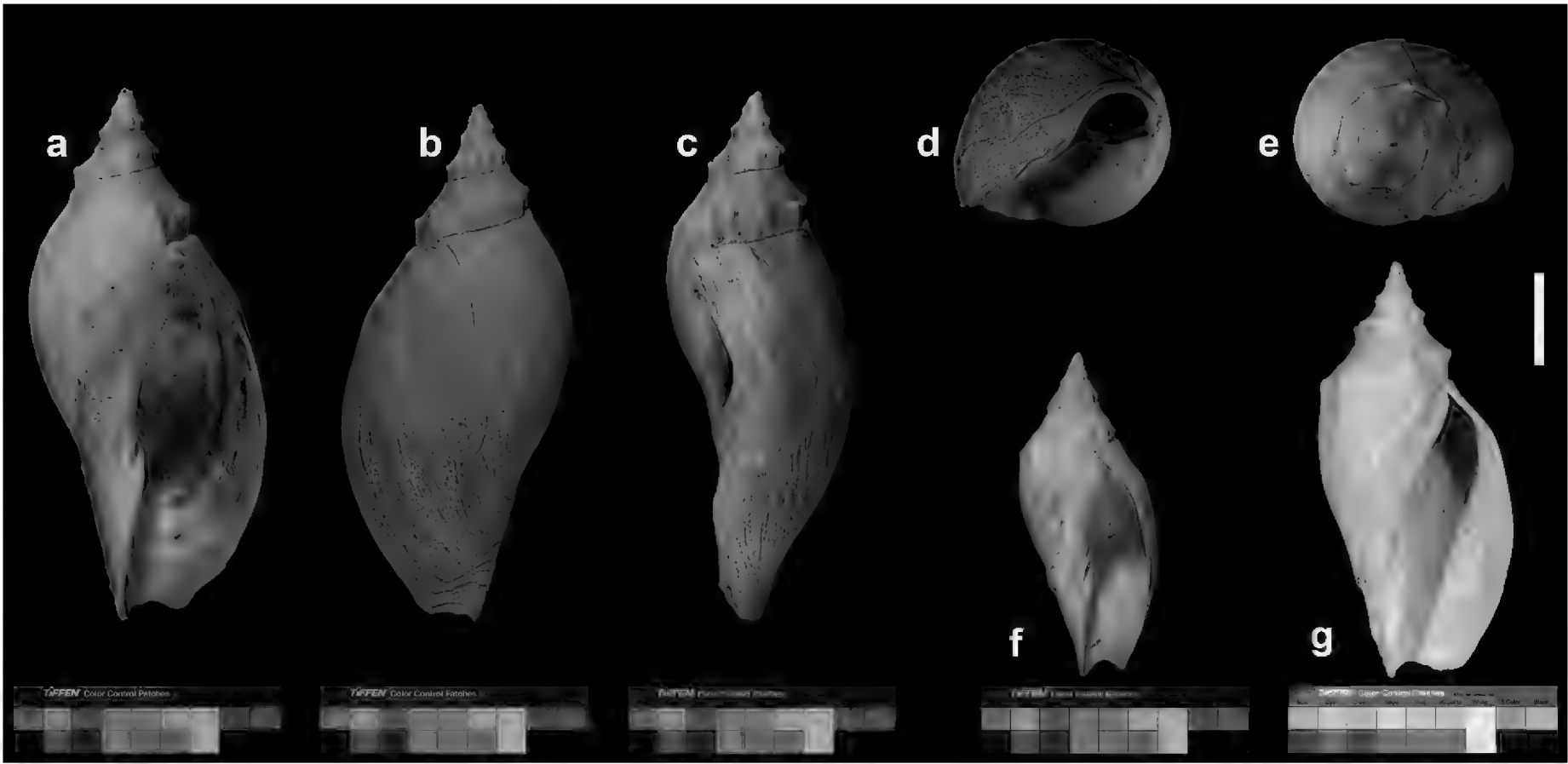


Figure 38. Specimens of *Voluta fusiformis typica*. **a–e** Specimen 1 **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view **f** Specimen 2 **g** Specimen 3. Scale bar: 5 cm.

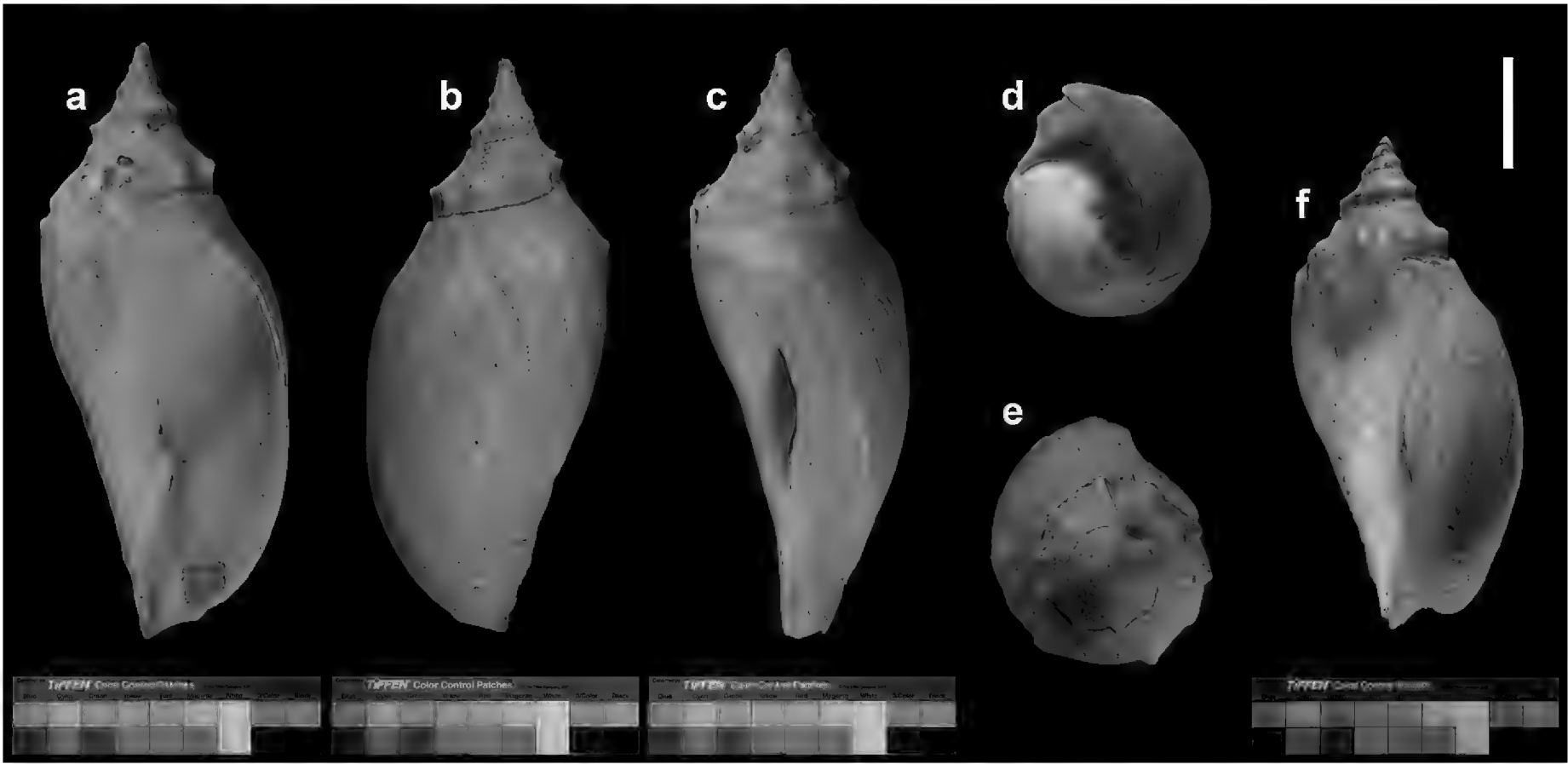


Figure 39. *Voluta fusiformis connexa*. **a–e** Specimen figured by Lahille (1895: pl. III, fig. 20) **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view **f** Specimen figured by Lahille (1895: pl. III, fig. 19) in apertural view. Scale bar: 5 cm.

Voluta fusiformis connexa Lahille, 1895

Syntypes: MLP-Ma 10883, 2 specimens figured by Lahille (1895) (Table 14), ca 213 mm and 257 mm long; 2 other specimens not figured by Lahille (Fig. 39).

This variety has few, well-spaced nodes on the last whorl of the spire.

Voluta fusiformis ornata Lahille, 1895

Syntypes: MLP-Ma 10885, 2 specimens figured by Lahille (1895) (Table 15), ca 86 mm long × 41.5 mm wide,

Table 14. Specimens of *Voluta fusiformis connexa* figured by Lahille (1895) with the detail of the inscriptions on their shells and figures here.

Figure in Lahille (1895)	Detail	Figure
Pl. III, fig. 20	506 “4.connexa”	39a-e
Pl. III, fig. 19	505 “3.connexa”	39f

and 109 mm long × 55 mm wide ; 4 other specimens not figured by Lahille (Fig. 40).

The shells have very strong tubercles on the last whorl. These are located on a small crest from which rudimentary longitudinal riblets spread out.

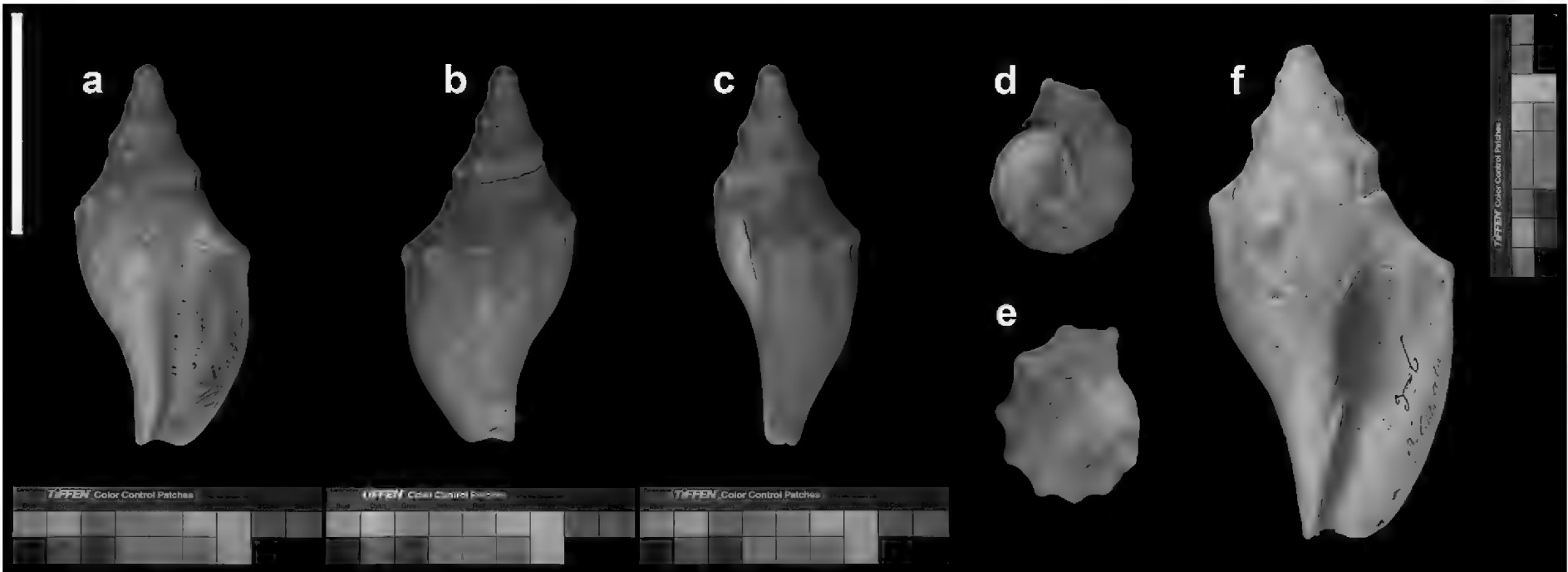


Figure 40. *Voluta fusiformis ornata*. **a–e** Specimen figured by Lahille (1895: pl. III, fig.16; pl. IV figs 24, 25) **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view **f** Specimen figured by Lahille (1895: pl. III, fig. 17; pl. IV, fig. 26). Scales bar: 5 cm.

***Voluta magellanica* Chemnitz, 1788**

Current name: *Adelomelon ancilla* (Lightfoot, 1786).
Lahille (1895) remarked on the similarity with *V. ambigua* and *V. ancilla*. *Voluta ambigua* has three coloured longitudinal lines that wide in some points; this character is not present in *V. ancilla*. Lahille (1895) described three varieties.

***Voluta magellanica typica* Lahille, 1895**

Syntypes: MLP-Ma 10888, 3 specimens figured by Lahille (1895) (Table 16), the largest ca 135 mm long × 61 mm wide; 14 other specimens unfigured by Lahille (1895) (Fig. 41).
Lahille (1895) described the shell of this variety as reaching 180 mm long by 90 mm wide, with six convex whorls on the spire. The shells vary from white to pale brown, with prominent dark lines. The aperture is almost oval and orange, pink, or light purple, with thin edges, and the lower columellar fold is not well developed. The juvenile forms have a reticulated surface, without tubercles; they have general aspect of *V. ancilla* but a little wider. The syntypes were divided into two series by Lahille.

***Voluta magellanica curta* Lahille, 1895**

Holotype: MLP-Ma 10886, 134 mm long × 72 mm wide. The specimen could not be matched to any figure by Lahille (1895). Label reads “*curta*” (Fig. 42).
According to Lahille (1895), this variety has a very depressed shell, with the last whorl globose, and with the aperture triangular, wider at the base. Three are strong, horizontal colour bands on the last whorl.

***Voluta magellanica taeniolata* Lahille, 1895**

Holotype: MLP-Ma 10887, 158 mm long × 84.5 mm wide, figured by Lahille (1895: pl. VII, fig. 154) (Fig. 43).

Table 15. Specimens of *Voluta fusiformis ornata* figured by Lahille (1895) with the detail of the inscriptions on their shells and figures here.

Figure in Lahille (1895)	Detail	Figure
Pl. III, fig. 16; pl. IV, figs 24, 25	“1. <i>ornata</i> ”	40a-e
Pl. III, fig. 17; pl. IV, fig. 26	“3. <i>ornata</i> ”	40f

Table 16. Specimens of *Voluta magellanica typica* figured in Lahille (1895) with the detail of the inscriptions on their shells and figures here.

Figure in Lahille (1895)	Detail	Figure
Pl. VIII, fig. 175	“17. <i>Mag.typica</i> (2°S)”	41a-e
Pl. VIII, fig. 172; pl. XII, Fig. 36	“Chubut”	41f
Pl. II, fig. 65; pl. VIII, fig. 173	“10. <i>Magellanica typica</i> ”	41g

According with Lahille (1895), this variety is similar to *V. magellanica curta*, but the aperture is semicircular and the columellar edge is deeply indented at the folds. The specimens of this variety can reach up to 150 mm long and 90 mm wide.

***Voluta oviformis* Lahille, 1895**

Current name: *Adelomelon ferussacii* (Donovan, 1824).
Lahille (1895) described this species and three varieties. This material was revised by Wiggers and Veitenheimer-Mendes (2004), who considered it to be a synonym of *Adelomelon ferussacii* (Donovan, 1824).

***Voluta oviformis typica* Lahille, 1895**

Syntypes: MLP-Ma 10890, 19 specimens figured by Lahille (1895) (Table 17); 4 other specimens not figured by Lahille (Figs 44, 45).
Lahille (1895) described this variety as having an ovoid, heavy and smooth, uniformly grey or dark brown shell, with irregular growth lines. The shells become thick, and in

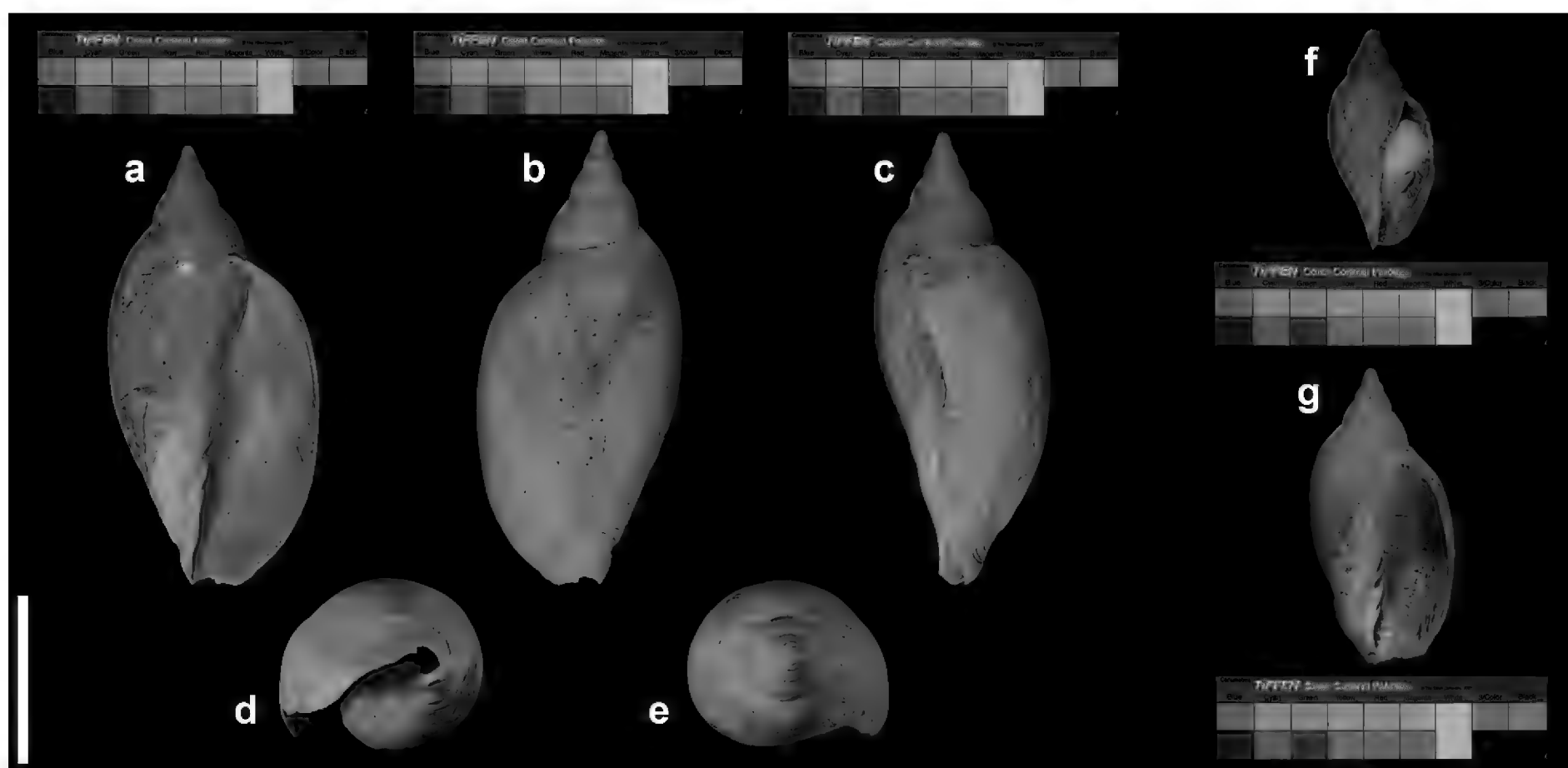


Figure 41. *Voluta magellanica typica*. **a–e:** Specimen figured by Lahille (1895: pl. VIII, fig. 175) **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view **f–g** Apertural view of two other specimens figured by Lahille (1895), see references on Table 16. Scale bar: 5 cm.

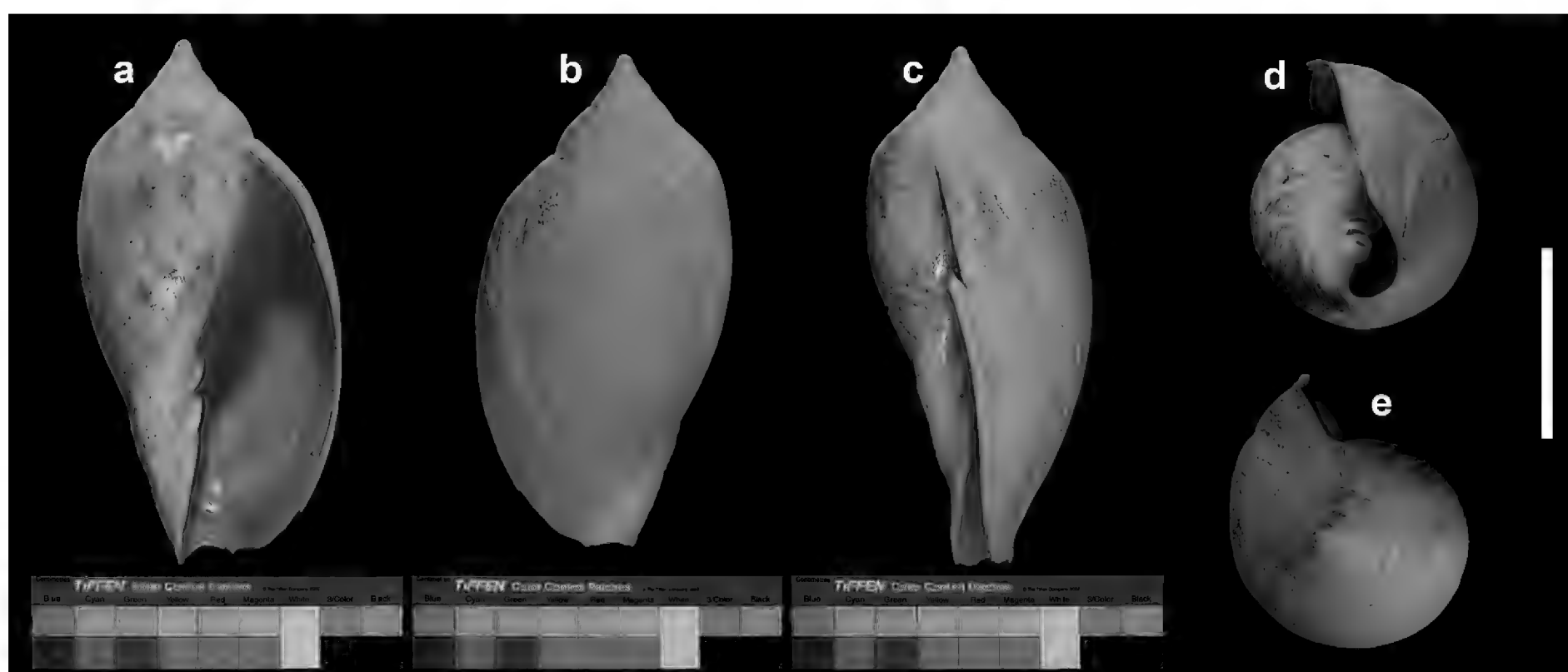


Figure 42. Holotype of *Voluta magellanica curta*. **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

old specimens, the free edge of the aperture is up to 7 mm thick. The largest specimens reach 125 mm long and 85 mm wide and weighing up to 270 g. The spire has five or six whorls. The columella is thick, white or yellowish, and with four to five folds, of which the inferior is more developed.

Voluta oviformis fratercula Lahille, 1895

Syntypes: MLP-Ma 10891, 2 specimens figured by Lahille (1895) (Table 18; Fig. 46).

According to Lahille (1895), this variety lacks tubercles but has a carina on the final part of the last whorl, which results in an angle on the free edge of the aperture, and a less pronounced carine next to the suture.

Voluta oviformis longiuscula Lahille, 1895

Holotype: MLP-Ma 14249, 92 mm long × 55 mm wide, figured by Lahille (1895: pl. VII, fig. 136). Label reads: “1. *Longiuscula*”. (Fig. 47).

According to Lahille (1895), this variety has the spire uniformly convex and the last whorl of the spire is very convex. The free edge of the aperture forms a regular curve.

Voluta paradoxa Lahille, 1895

Current name: *Odontocymbiola magellanica* (Gmelin, 1791).

Lahille (1895) described this species without varieties.

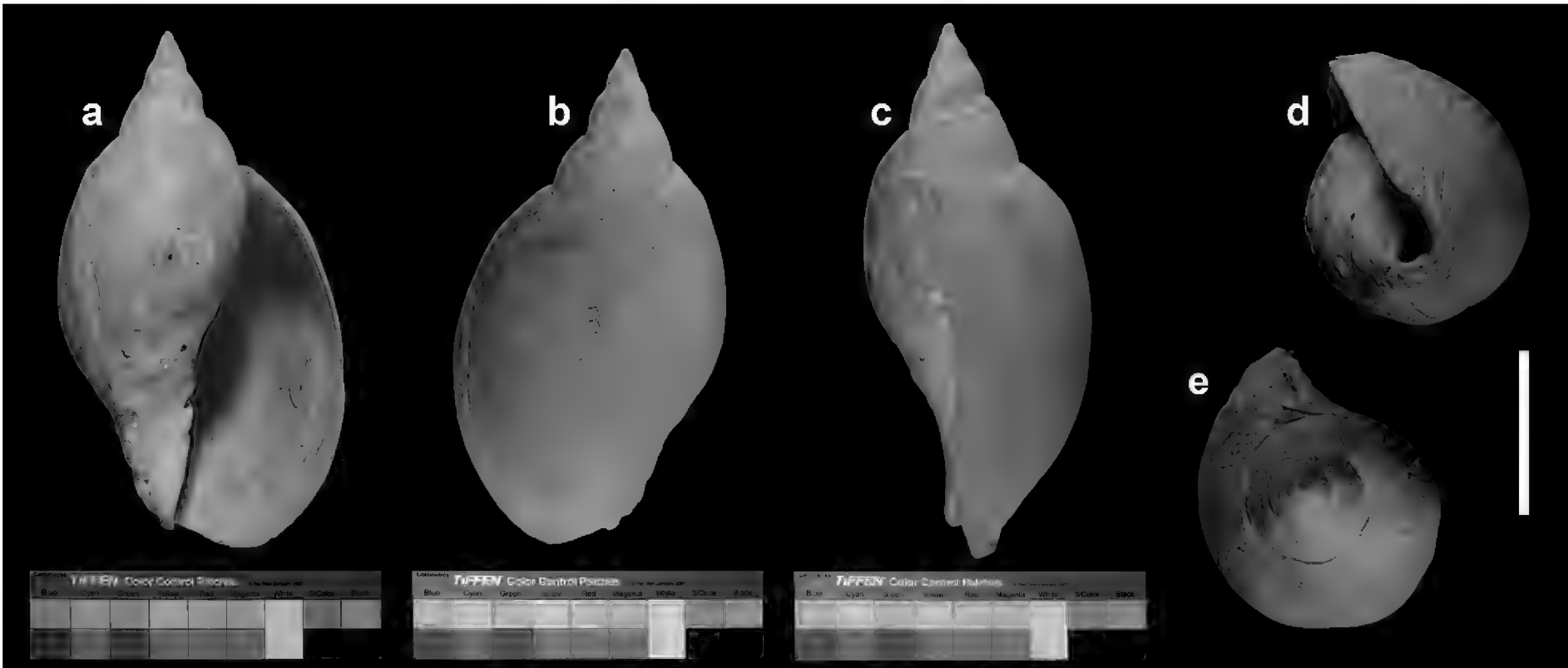


Figure 43. *Voluta magellanica taeniolata*, holotype figured by Lahille (1895: pl. VII, fig. 154) **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

Table 17. Specimens of *Voluta oviformis typica* figured by Lahille (1895) with the detail of the inscriptions on their shells and figures here.

Figure in Lahille (1895)	Detail	Figure
Pl. X, fig. 6	269 534	44
Pl. VII, fig. 134	“ <i>Rugosa</i> ” (variety not described)	45a
Pl. I, fig. 1; pl. VII, fig. 133.	“ <i>Rugosa</i> ” (variety not described)	45b
Pl. VII, fig. 132	“ <i>Pseudo-intermedia</i> ” (variety not described)	45c
Pl. X, fig. 5	“8. <i>typica</i> 2°s”	45d
Pl. VII, fig. 131	“12. <i>typica</i> 2°s”	45e
Pl. VII, fig. 130	“11. <i>typica</i> ”	45f
Pl. VII, fig. 135	“5. <i>typica</i> 2°s”	45g
Pl. II, fig. 56; pl. VII, fig. 129	“10. <i>typica</i> 458”	45h
Pl. VII, fig. 137	“1. <i>typica</i> ”	45i
Pl. VII, fig. 127	“8. <i>typica</i> 2°s”	45j
Pl. VII, fig. 128	“9. <i>typica</i> 2°s”	45k
Pl. XII, fig. 25	“7. <i>typica</i> ”	45l
Pl. VII; fig. 126	“6. <i>typica</i> 2°s”	45m
Pl. II, fig. 55; pl. VII, fig. 125	“5. <i>typica</i> 2°s”	45n
Pl. VII; fig. 124	“3. <i>typica</i> 2°s”	45o
Pl. VII, fig. 123; pl. XII, fig. 24	“4. <i>typica</i> 2°s”	45p
Pl. II, fig. 54; pl. VII, fig. 122; pl. XII, fig. 23	“2. <i>typica</i> 2°s”	45q
Pl. II, Fig. 53; pl. VII, fig. 121; pl. XII, fig. 22	“1. <i>typica</i> ”	45r

Voluta paradoxa typica Lahille, 1895

Syntypes: MLP-Ma 10892, 8 specimens figured by Lahille (1895) (Table 19); 12 other specimens not figured by Lahille. The largest one is 173 mm long × 77 mm wide (Figs 48, 49).

Lahille (1895) differentiated *V. paradoxa* from *V. colocynthis pseudomagellanica* and *V. magellanica typica* by differences in the juvenile shells. According to him,

Table 18. Specimens of *Voluta oviformis fratercula* figured in Lahille (1895) with the detail of the inscriptions on their shells and figures here.

Figure in Lahille (1895)	Detail	Figure
Pl. X, fig. 7	230 ½. 535	46a-e
Pl. X, fig. 8	529 “1. <i>Pseudo-intermedia</i> ” (variety not described)	46f

Table 19. *Voluta paradoxa typica*, specimens figured by Lahille (1895) with the detail of the inscriptions on their shells and figures here.

Figure en Lahille (1895)	Detail	Figure
Pl. II, fig. 76b; pl. VIII, fig. 161; pl. XII, fig. 20	“11. <i>paradoxa</i> ”	48
Pl. VIII, fig. 157		49a
Pl. V, fig. 41; pl. VII, fig. 139	“12. <i>paradoxa</i> (1°S)”	49b
Pl. XII, fig. 21	343 - 454	49c
Pl. II, fig. 68a; pl. VII, fig. 147; pl. VIII, fig. 166		49d
Pl. XII, fig. 19		49e
Pl. II, fig. 68a; pl. XII, fig. 18		49f
Pl. XII, fig. 17		49g

the shells are thick, similar to *V. colocynthis pseudomagellanica*. The specimens have discontinuous colour lines that can form three bands on the last whorl, similar to *V. magellanica*. The shells lack tubercles. The last whorl is ovoid and globose. Generally, there are three columellar folds, with the inferior fold smaller, and supernumerary folds are sometimes present. The shells are up to 180 mm long and 86 mm wide and can weigh up to 260 g.

This material was revised by Wiggers and Veitenheimer-Mendes (2004), who remarked that all the syntypes illustrated by Lahille (1895) as *V. paradoxa* and deposited in the Museo de La Plata are *Odontocymbiola magellanica* (Gmelin, 1791).

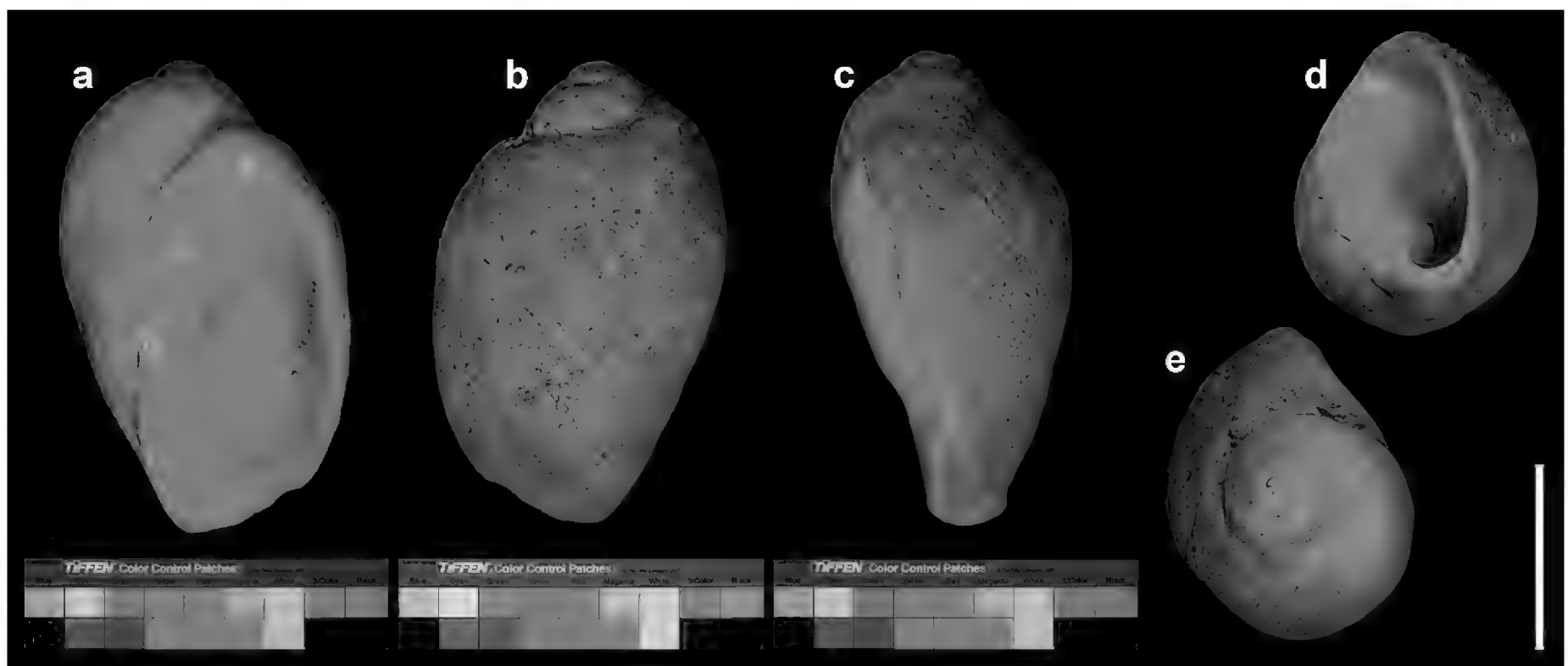


Figure 44. *Voluta oviformis typica*, specimen figured by Lahille (1895: pl. X, fig. 6). **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

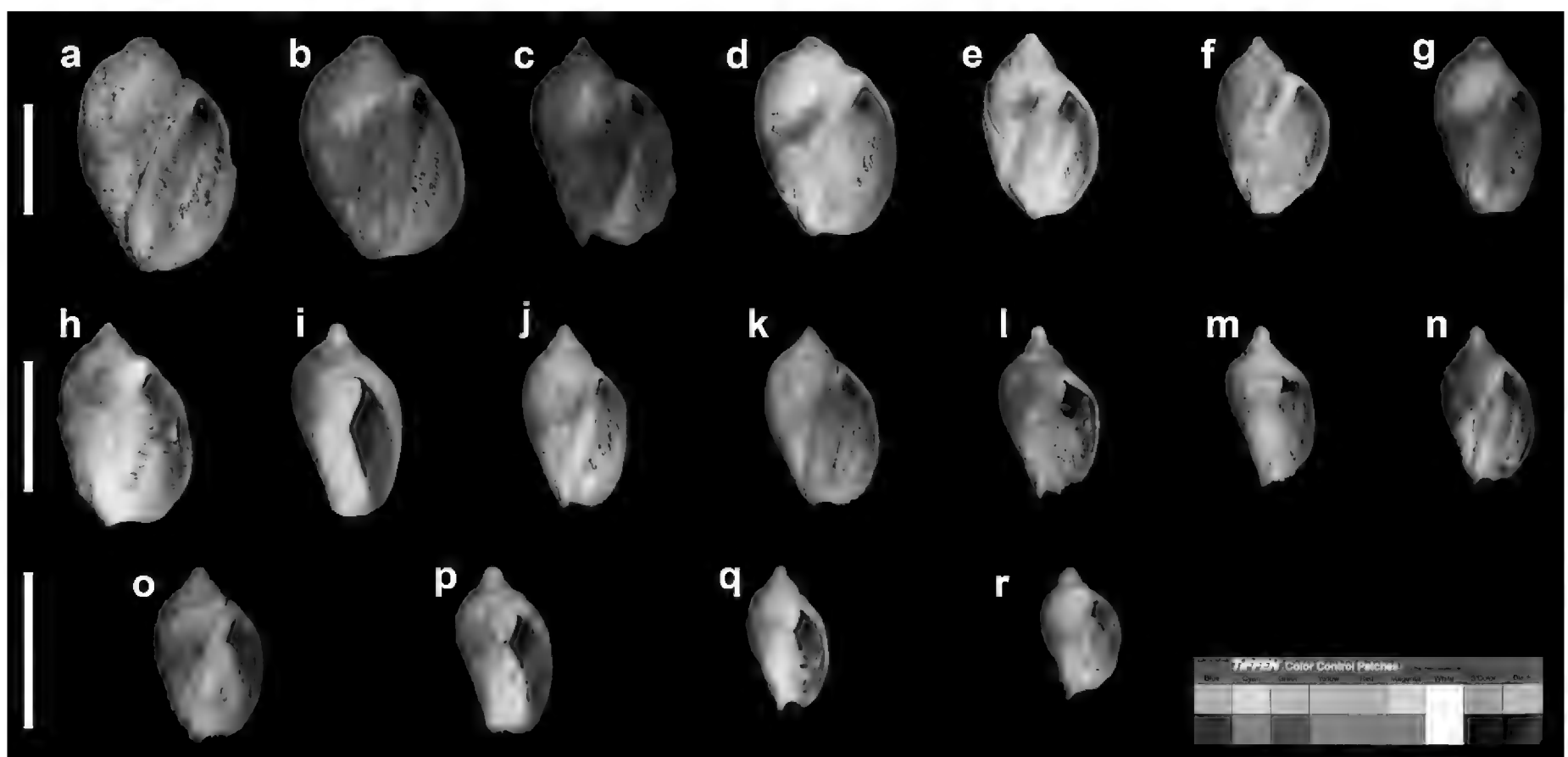


Figure 45. *Voluta oviformis typica*, specimens of figured by Lahille (1895). See references on Table 17. Scale bars: 5 cm.

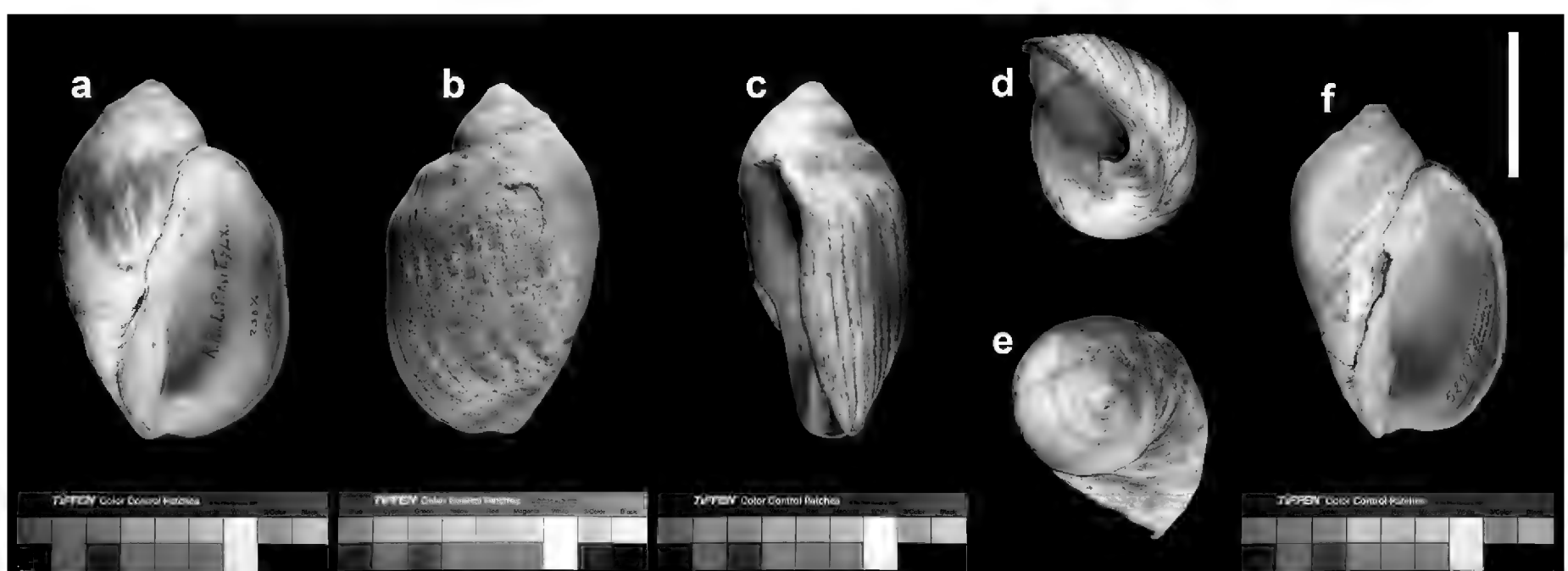


Figure 46. *Voluta oviformis fratercula*. **a–e** Specimen figured by Lahille (1895: pl. X, fig. 7) **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view **f** Specimen figured by Lahille (1895: pl. X, fig. 8) in apertural view. Scale bar: 5 cm.

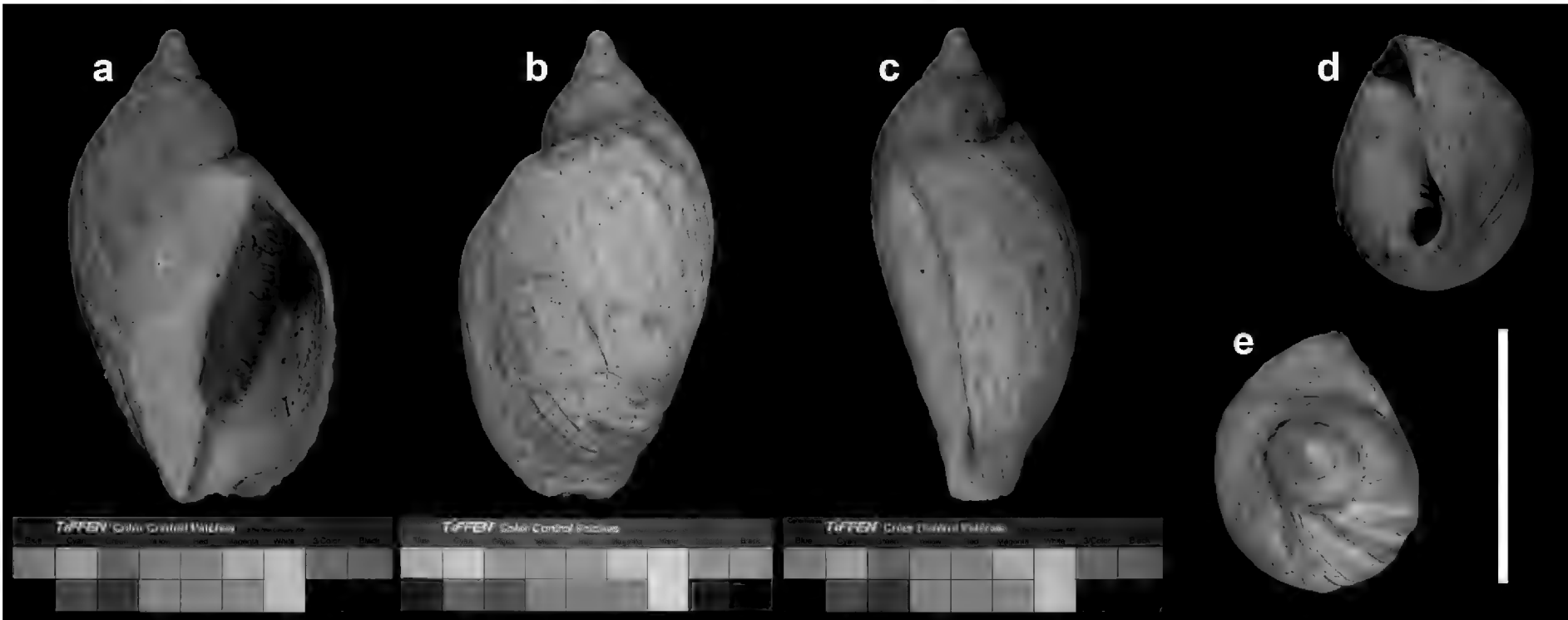


Figure 47. *Voluta oviformis longiuscula*, holotype figured by Lahille (1895: pl. VII, fig. 136) **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

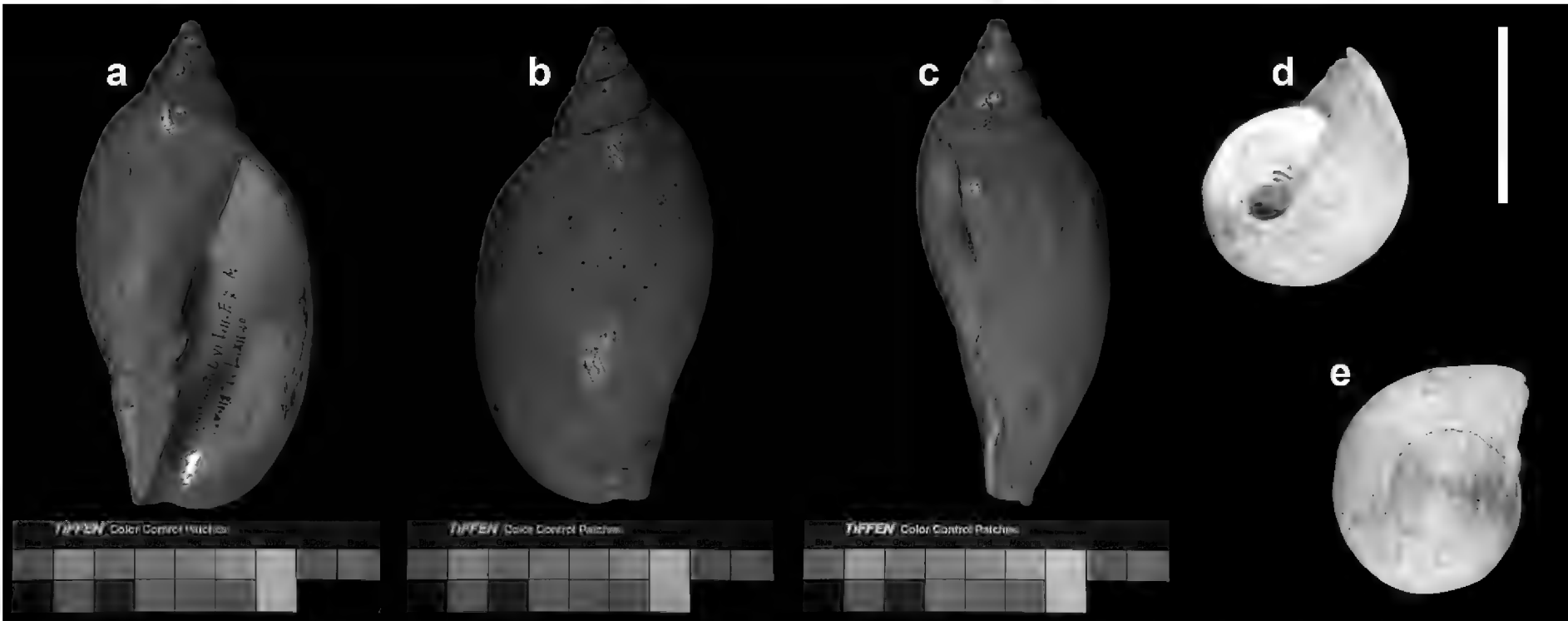


Figure 48. *Voluta paradoxa typica* specimen figured by Lahille (1895: pl. II, fig. 76b; pl. VIII, fig. 161; pl. XII, fig. 20) **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

***Voluta tuberculata* Wood, 1828**

Current name: *Odontocymbiola magellanica* (Gmelin, 1791).

Lahille (1895) described five varieties of this species, and mentioned the similarity of this species to *V. colocynthis*. This species is smaller than *V. colocynthis* and always has small lines or flames, usually in three rows.

***Voluta tuberculata typica* Lahille, 1895**

Syntypes: MLP-Ma 10897, 2 specimens figured by Lahille (1895) (Table 20). Shells of 55 mm long × 27 mm wide, and 85.5 mm long × 50 mm wide (Fig. 50).

According to Lahille (1895), adult shells reach up to 120 mm long and 67 mm wide, and are subturbinated. The suture between the penultimate whorl and last whorl is below the carina on the last whorl of the spire. The

Table 20. Specimens of *Voluta tuberculata typica* figured by Lahille (1895) with the detail of the inscriptions on their shells and figures here and figures here.

Figure in Lahille (1895)	Detail	Figure
Pl. VII, fig. 142; pl. XII, fig. 4	"2. <i>Tuberculata typica</i> "	50a-e
Pl. XII, fig. 5	"1. <i>Tuberculata typica</i> "	50f

first two or three whorls of the spire are smooth, and the following three whorls are carinate and have tubercles. Usually, three equal columellar folds are present.

***Voluta tuberculata decipiens* Lahille, 1895**

Syntypes MLP-Ma 10896, 2 specimens figured by Lahille (1895) (Table 21); 2 other specimens not figured by Lahille (Fig. 51).

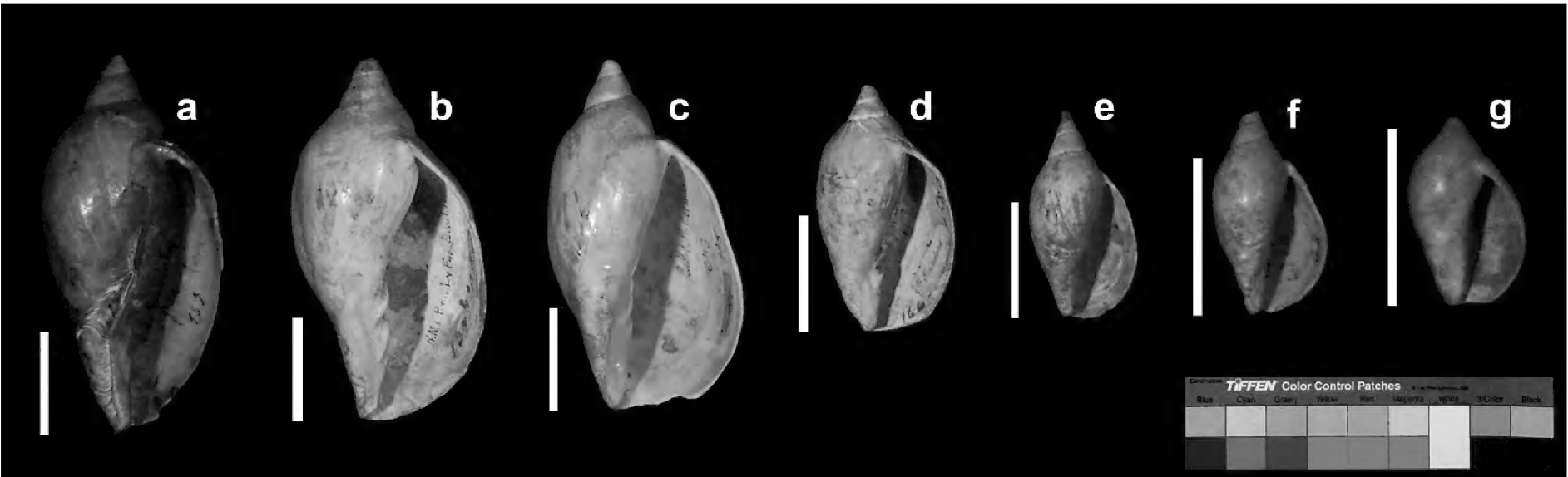


Figure 49. Specimens of *Voluta paradoxa typica* figures by Lahille (1895). See references on Table 19. Scale bars: 5 cm.

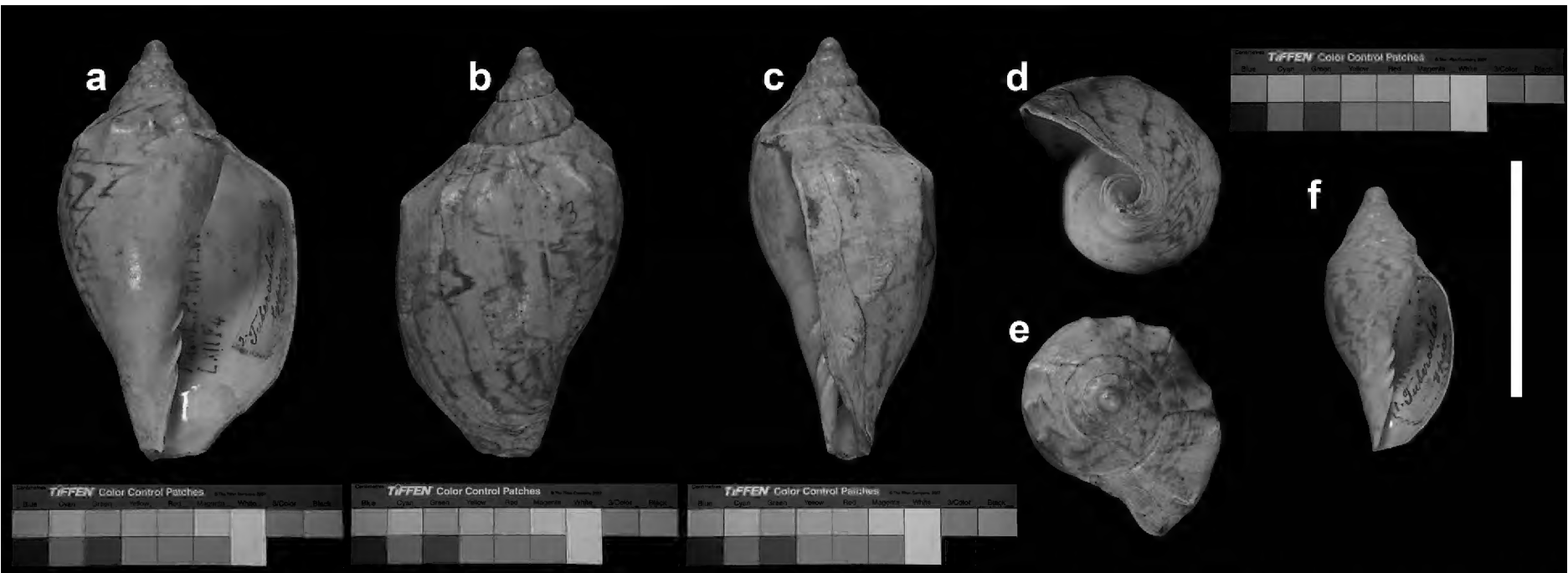


Figure 50. *Voluta tuberculata typica*. **a–e** Specimen figured by Lahille (1895: pl. VII, fig. 142; pl. XII, fig. 4) **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view **f** Specimen figured by Lahille (1895: pl. XII, fig. 5) in apertural view. Scale bar: 5 cm.

Table 21. Specimens of *Voluta tuberculata decipiens* figured by Lahille (1895) with the detail of the inscriptions on their shells.

Figure in Lahille (1895)	Detail	Figure
Pl. VII, fig. 152; pl. XI, fig. 10	“2. <i>Decipiens</i> ”	51a-e
Pl. VII, fig. 151; pl. VIII, fig. 162*	“1. <i>Decipiens</i> ”	51f

*The legend of plate VIII, figure 162 indicates *Voluta magellanica decipiens*, a variety which is never mentioned in the text. No material exists with that name, so it is probably an error.

According to Lahille (1895), this variety is similar to *V. ferruginea* but more elongate (125 mm long × 65 mm wide).

Voluta tuberculata ferruginea Lahille, 1895

Syntypes: MLP-Ma 10898, 3 specimens figured by Lahille (1895) (Table 22); 2 other specimens not figured by Lahille. Specimens are from 90.5 to 133.5 mm long (Fig. 52).

According to Lahille (1895), this variety has a short shell (140 mm long × 90 mm wide), with the last whorl globose, and with an eroded carina. The free edge of

Table 22. Specimens of *Voluta tuberculata ferruginea* figured by Lahille (1895) with the detail of the inscriptions on their shells and figures here.

Figure in Lahille (1895)	Detail	Figure
Pl. I, fig. 13; pl. VII, fig. 145; pl. XII, fig. 6	“2. <i>Ferruginea</i> ”	52a-e
Pl. II, Fig. 76a*; pl. VII, fig. 146	“1. <i>Ferruginea</i> ”	52f
Pl. VII, fig. 144	“1. <i>Ferruginea</i> ”	52g

*Figure 146 of Plate VII indicates variety *fulgurea*, whereas legend on figure 76a of plate II corresponds to *V. paradoxa*. Figure 67a only indicates *V. tuberculata*, so it probably corresponds to this shell. On the MLP label, it is assigned to this variety with doubt.

the aperture is regularly curved. The inferior columellar fold is small and sometimes with two supplementary upper folds.

Voluta tuberculata fulgurea Lahille, 1895

Syntypes: MLP-Ma 10893, 3 specimens figured by Lahille (1895) (Table 23); 77–121 mm long (Fig. 53).

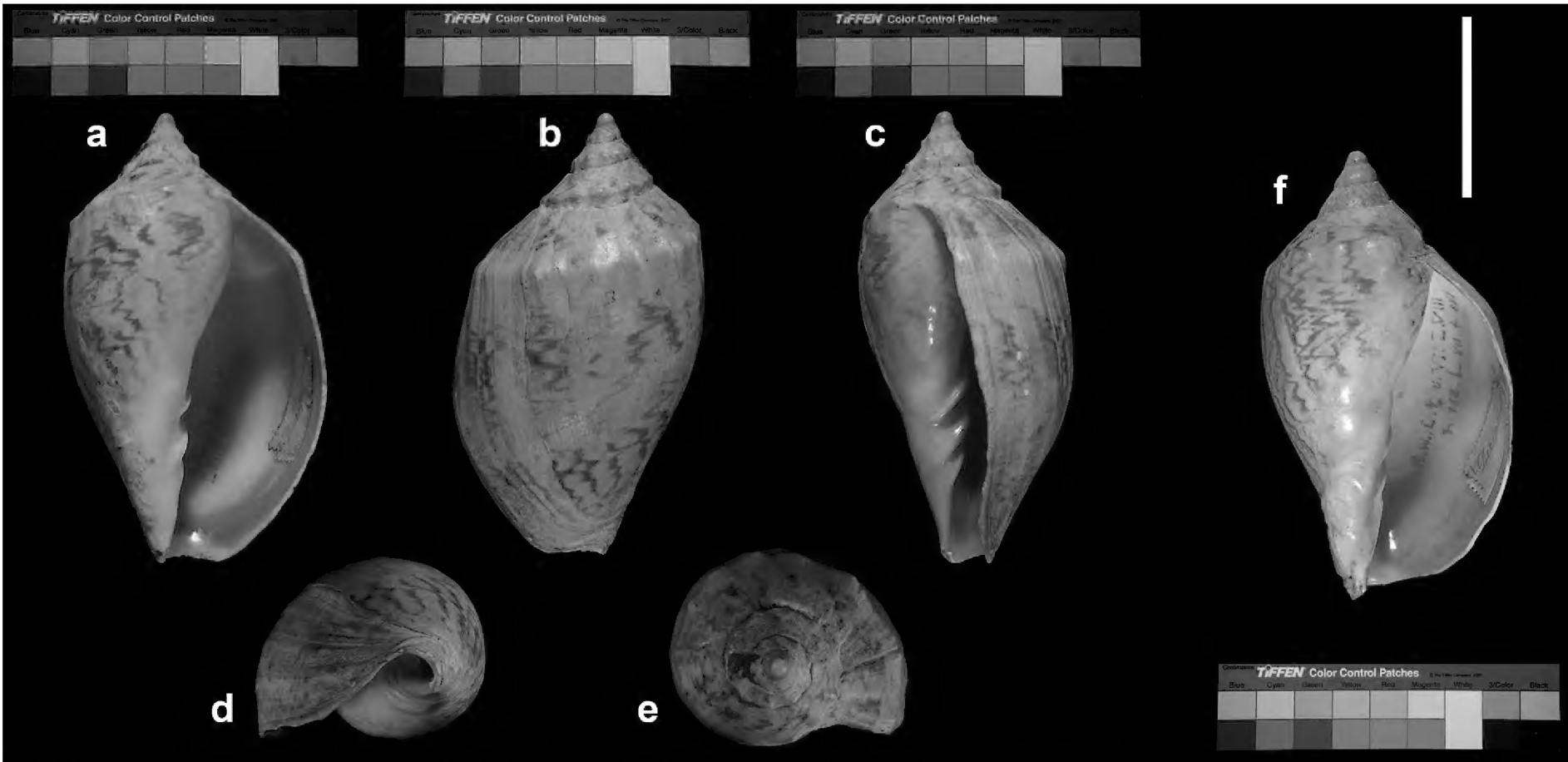


Figure 51. *Voluta tuberculata decipiens*. **a–e** Specimen figured by Lahille (1895: pl. VII, fig. 152; pl. XI, fig. 10) **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view **f** Specimen figured by Lahille (1895: pl. VII, fig. 151; pl. VIII, fig. 162) in apertural view. Scale bar: 5 cm.

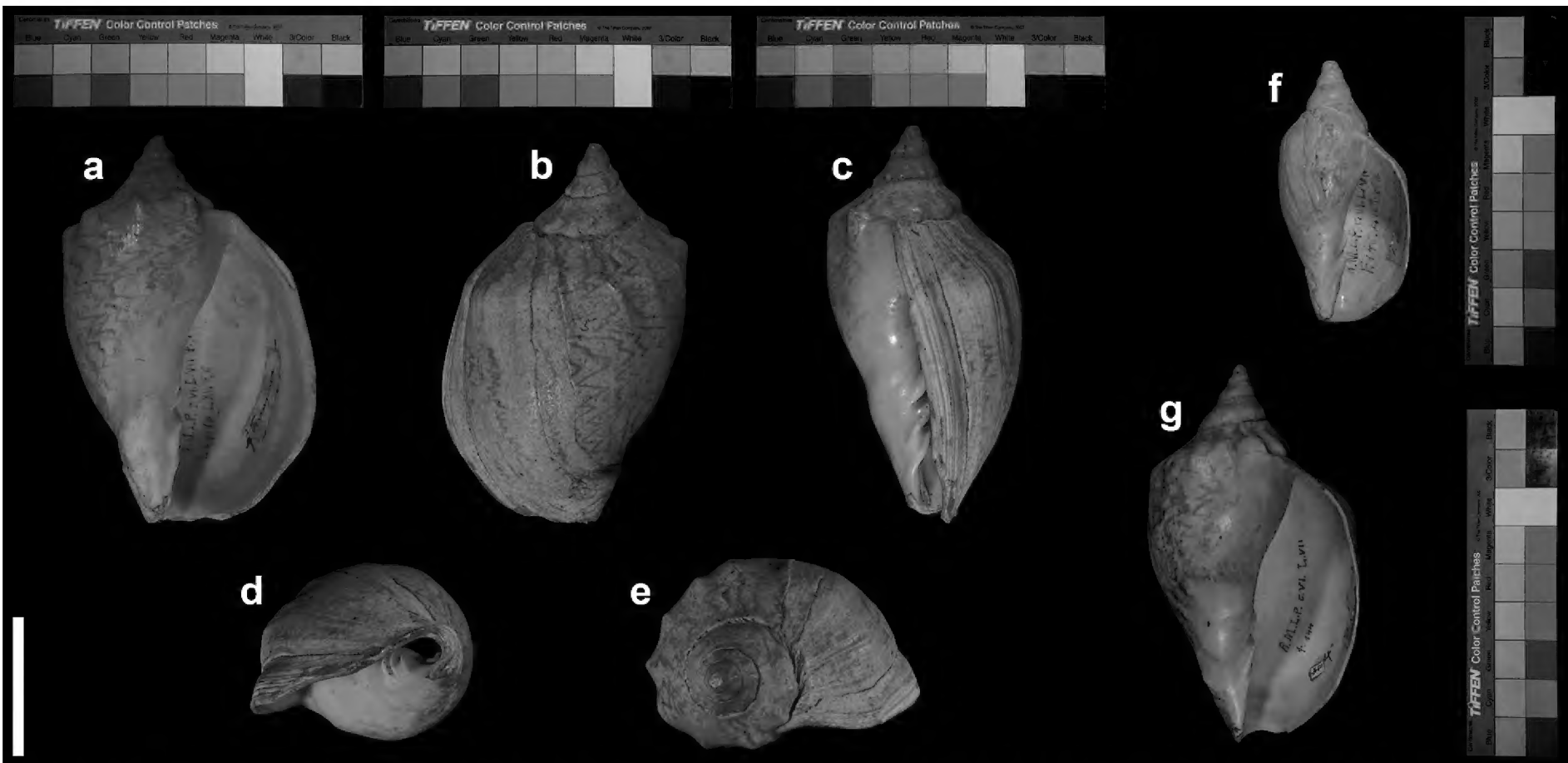


Figure 52. *Voluta tuberculata ferruginea*. **a–e** Specimen figured by Lahille (1895: pl. I, fig. 13; pl. VII, fig. 145; pl. XII, fig. 6) **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view **f** Specimen figured by Lahille (1895: pl. VII, fig. 146; pl. II, fig. 76a) in apertural view **g** Specimen figured by Lahille (1895: pl. VII, fig. 144) in apertural view. Scale bar: 5 cm.

Table 23. Specimens of *Voluta tuberculata fulgurea* figured by Lahille (1895) with the detail of the inscriptions on their shells and figures here.

Figure in Lahille (1895)	Detail	Figure
Pl. VII, fig. 153	“3.Fulgurea”	53a–e
Pl. VII, fig. 141; pl. XII, fig. 2; pl. II, fig. 67	“1.Fulgurea”	53f
Pl. VII, fig. 150; pl. XII, fig. 1	“Fulgurea”	53g

Lahille (1895) described the shells as elongate, with the last whorl large and ovoid, and with few tubercles. The penultimate whorl is convex and without tubercles.

Voluta tuberculata pseudofusiformis Lahille, 1895

Holotype: MLP-Ma 10894, 125.5 mm long × 71.5 mm wide, figured by Lahille (1895: pl. XII, fig. 7); label reads: “4.*Pseudo-fusif*(2°S)” (Fig. 54).

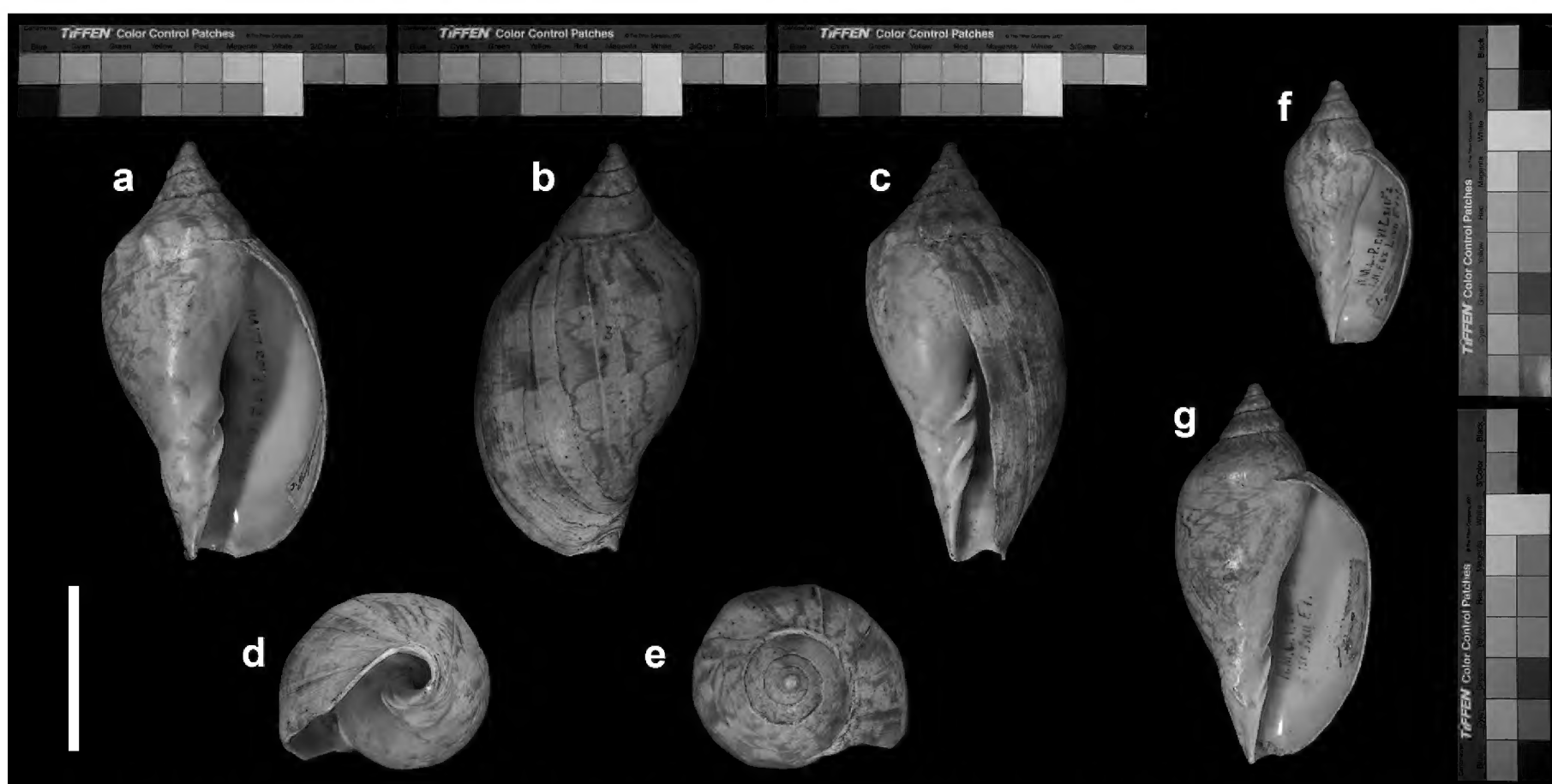


Figure 53. *Voluta tuberculata fulgurea*. **a–e** Specimen figured by Lahille (1895: pl. VII, fig. 153) **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view **f** Specimen figured by Lahille (1895: pl. VII, fig. 141; pl. XII, fig. 2; pl. II, fig. 67) in apertural view **g** Specimen figured by Lahille (1895: pl. VII, fig. 150; pl. XII, fig. 1). Scale bar: 5 cm.

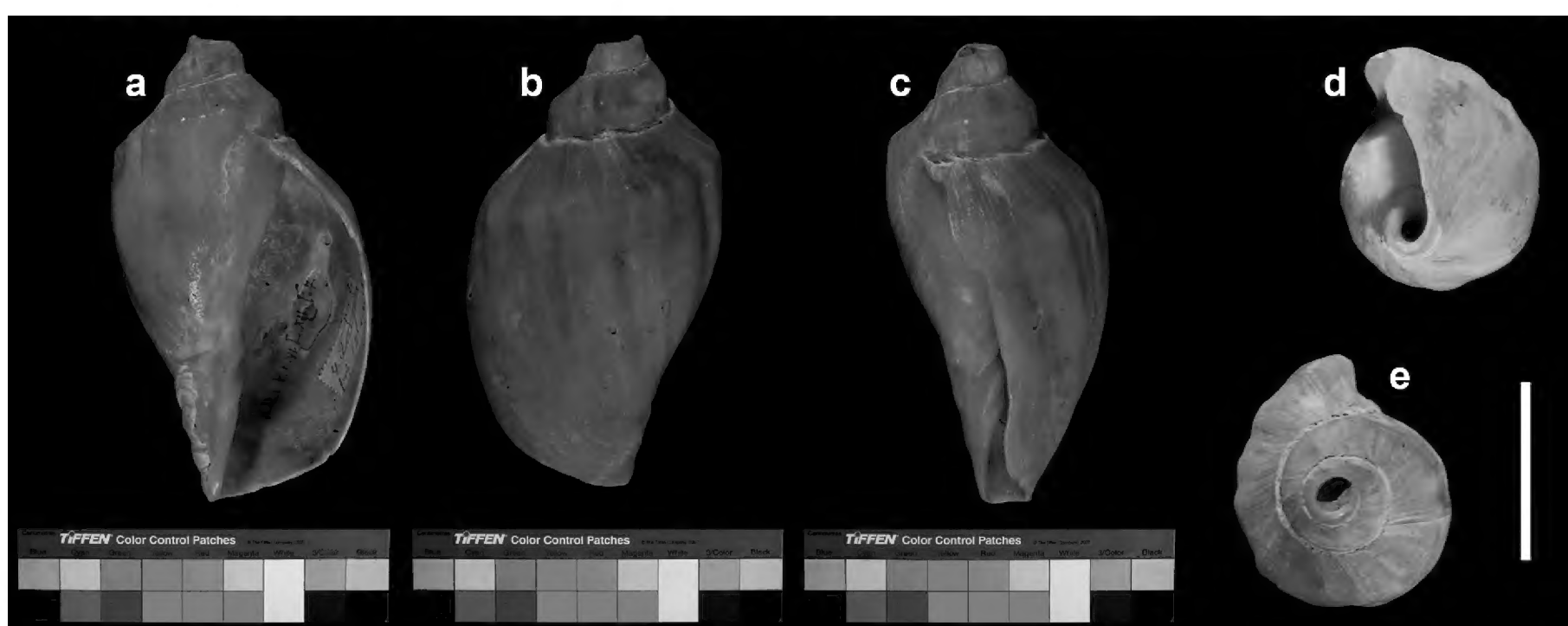


Figure 54. *Voluta tuberculata pseudofusiformis*, holotype figured by Lahille (1985: pl. XII, fig. 7). **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

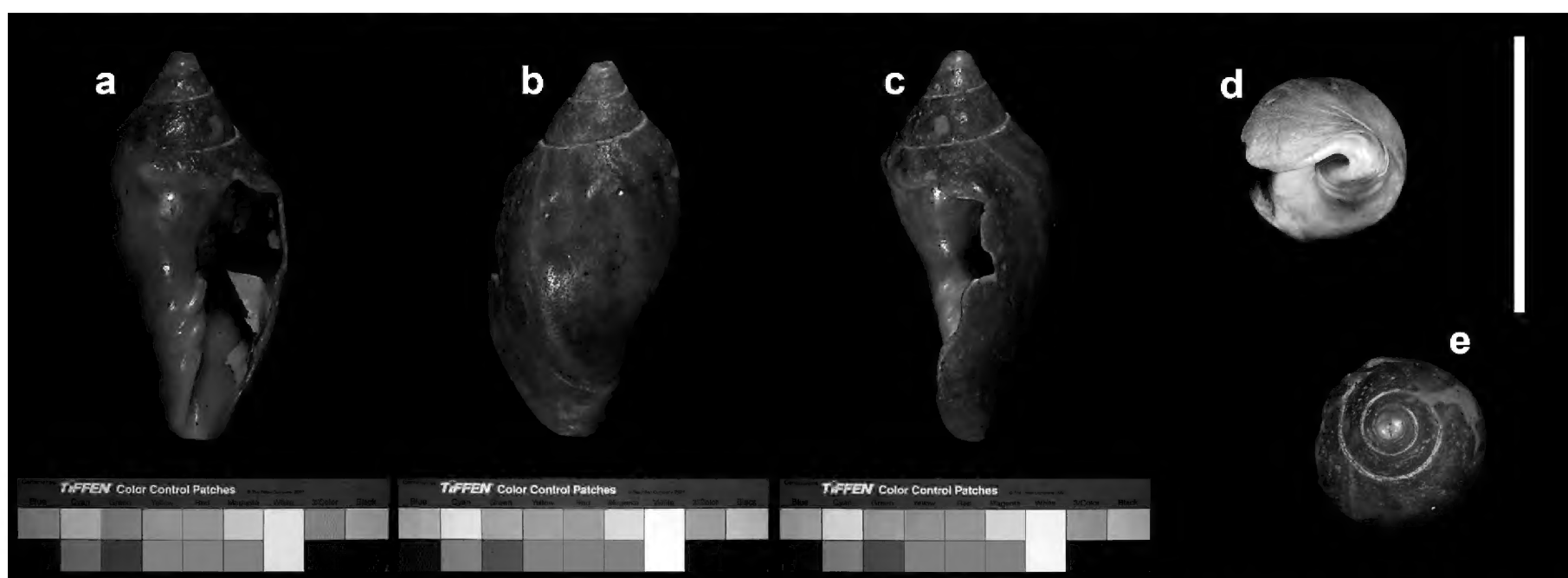


Figure 55. *Voluta tuberculata ambigua*, specimen figured by Lahille (1895: pl. VIII, fig. 155). **a** Apertural view **b** Dorsal view **c** Lateral view **d** Umbilical view **e** Apical view. Scale bar: 5 cm.

According to Lahille (1895), this variety has an elongated shell with three dark lines. The last three whorls are carinate and with tubercles. The columella has four or five folds.

Additional comments

There is a sixth variety, *Voluta tuberculata ambigua*, figured by Lahille (1895: pl. VIII, figs 155, 156) but not described. In the collection there is a specimen (MLP-Ma 10895) of ca 69 mm long, with an inscription: “Plate VIII, Fig. 155” (Fig. 55). However, the label reads “1. *Ferruginea*”.

Twenty one other specimens from Lahille’s Collection (MLP-Ma 14250) have not been identified as representatives of any of the previously mentioned varieties.

Along with the material of *Voluta ancilla*, there are 16 other specimens (MLP-Ma 14244) with a label that reads “*crocea*”. There is no variety with that name in the publication by Lahille (1895).

Acknowledgements

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References

- Arrozpide RF (1986) Catálogo de tipos de Arácnida (Araneae) del Museo de La Plata. Serie técnica y didáctica. Museo de La Plata 12, 63 pp.
- Carcelles AR (1944) Catálogo de los moluscos marinos de Puerto Quequén (República Argentina). Revista del Museo de La Plata (N. S.), Zoología 3: 233–309.
- Castellanos ZJA de, Landoni N (1992) Catálogo descriptivo de la malacofauna marina magallánica. Neogastropoda Volutidae, Volutomitridae, Cancellariidae, Olividae y Marginellidae. Comisión de Investigaciones Científicas 10, 43 pp.
- César I, Damborenea C (2010) Type and non-type specimens of *Aegla* (Aeglidae: Anomura: Decapoda) housed in the Museo de La Plata, Argentina. Zootaxa 2337: 31–46. <https://doi.org/10.11646/zootaxa.4303.1.5>
- César I, Damborenea C (2016) Catalogue of the specimens of Trichodactylidae (Crustacea, Brachyura) housed in the Museo de La Plata, Argentina. Revista del Museo de La Plata, Sección Zoología 25(184): 1–13.
- Díaz AR, Merlo Álvarez VH, Damborenea C (2017) Type material housed in the Carcinological Collection of the Museo de La Plata, Argentina. Zootaxa 4303: 88–102. <https://doi.org/10.11646/zootaxa.4303.1.5>
- Lahille F (1895) Contribución al estudio de las volutas argentinas. Revista del Museo de La Plata, Sección Zoología 6: 293–325.
- Lasta ML, Roux A, Bremec C (2000) Caracoles marinos de interés pesquero. Moluscos gasterópodos volutidos. INIDEP Mar del Plata. Informe técnico 31: 1–13.
- Lunaschi L, Merlo-Álvarez VH, Damborenea C (2012) Type material housed in the Helminthological Collection of the Museo de La Plata, Buenos Aires, Argentina. Zootaxa 3199: 1–59. <https://doi.org/10.11646/zootaxa.3199.1.1>
- Martín SM, César II (2004) Catálogo de los tipos de moluscos (Gastropoda, Bivalvia, Cephalopoda) del Museo de La Plata. Fundación Museo de La Plata, La Plata, 76 pp.
- Morton B (1986) The diet and prey capture mechanism of *Melo melo* (Prosobranchia: Volutidae). Journal of Molluscan Studies 52: 156–160. <https://doi.org/10.1093/mollus/52.2.156>
- Penchaszadeh PP, de Mahieu GG (1976) Reproducción de gasterópodos Prosobranchios del Atlántico sudoccidental. Volutidae. Physis Sección A 35(91): 145–153.
- Pereira LA, Ituarte C, Tassara MP (2004) The types of Chilopoda and Diplopoda (Myriapoda) housed at the Museo de La Plata, Argentina. Zootaxa 586: 1–10. <https://doi.org/10.11646/zootaxa.586.1.1>
- Pereira LA, Sutton CA, Ramirez MJ (1999) Catálogo de tipos de Araneae (Arácnida) del Museo de La Plata. Neotropica 45(113–114): 77–100.
- Poppe GT, Goto Y (1992) Volutes. Mostra Mondiale Malacologia by L’informatore Piceno, Ancona, 48 pp. [107 pls.]
- Rosenberg G (2009) Malacolog 4.1.1: A Database of Western Atlantic Marine Mollusca. <http://www.malacolog.org> [Accessed on: 2018–4–15]
- Scarabino V (1977) Moluscos del Golfo San Matías (Provincia de Río Negro, República Argentina). Inventario y claves para su identificación. Comunicaciones de la Sociedad Malacológica del Uruguay 4: 177–285.
- Sutton CA, Damborenea C (2000) Colección helmintológica del Museo de La Plata: I. Catálogo de preparaciones microscópicas, material tipo y no tipo. Serie Técnica y Didáctica Museo de La Plata 35: 1–20.
- Wiggers F, Veitenheimer-Mendes IL (2008) Taxonomic review of the genus *Adelomelon* (Gastropoda; Volutidae), based on type material. Brazilian Journal of Biology 68(4): 843–850. <http://doi.org/10.1590/S1519-69842008000400021>